Making
OPERATIONAL SUPPORT AIRLIFT
Ready for War

Lt Col David D. Dyche,
USAF

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Making Operational Support Airlift Ready for War

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Foreword

Few Air Force members are as familiar with operational support airlift (OSA) as Lt Col David Dyche. He has blended his recent operational experiences as an OSA unit commander with solid research to present this essential study. Its timing could not have been better.

For many commanders and other senior Air Force leaders, OSA is an indispensable tool supporting their short-notice, time-critical air transportation requirements. Meanwhile, OSA serves as a low cost means to season young pilots before moving them on to the major, and much more costly, airlift weapons systems. Unfortunately, OSA has focused on peacetime distinguished visitor transportation and pilot seasoning roles with little regard to possible wartime missions and requirements.

With this report, Colonel Dyche recommends corrections to this deficiency. He offers specific OSA wartime roles and missions while proposing new ways to organize, train, and equip OSA in peacetime to make it ready for war. Several specific suggestions are already receiving consideration at the Air Force's highest levels. In addition, his ideas and arguments are supported by the most thorough and comprehensive historical research ever conducted concerning OSA and its roots. The history chapters alone represent a significant contribution to Air Force heritage. However, this report's highest marks go to Colonel Dyche's insightful and lucid analysis connecting the past with the present showing how OSA should change today to meet tomorrow's needs.

OSA is a limited and precious resource. Colonel Dyche shows how to make the most out of this resource, during peace and war. Therefore, the Air Force, indeed all the services, can learn and benefit a great deal from this work. As such, it is must reading for every general officer, OSA user and operator, and wartime support planner.

ROBERT M. JOHNSTON, Colonel, USAF
Director, Airpower Research Institute

About the Author

Lt Col David D. Dyche

Lt Col David D. Dyche is a native of Albuquerque, New Mexico, but grew up in Sunnyvale, California. He graduated from the United States Air Force Academy in 1975 with a bachelor of science degree in physics. In 1976, he completed undergraduate pilot training at Reese AFB, Texas. His first operational assignment was to the 36th Tactical Airlift Squadron at McChord AFB, Washington, flying the C-130. During this tour, he upgraded to instructor aircraft commander and was fully tactically qualified, including both the low altitude parachute extraction system and special operations low level qualifications. Next, he graduated in 1983 with a master of science degree in optical physics from the University of Arizona under the Air Force Institute of Technology (AFIT)-sponsored Senior Commanders' Education Program. His follow-on assignment was to Headquarters Air Force Space Command and Headquarters North American Aerospace Defense Command in Colorado Springs, Colorado. He served as a plans officer and staff physicist coordinating the research, development, acquisition, and deployment of several ground-based, electro-optical, space surveillance systems around the world.

Colonel Dyche returned to flying in 1986 when he was assigned to the 21st Tactical Airlift Squadron at Clark Air Base, Republic of the Philippines. He requalified as a tactical instructor aircraft commander in the C-130 and served as the executive officer to the 374th Tactical Airlift Wing (TAW) commander. In 1990, Colonel Dyche graduated from the United States Marine Corps (USMC) Command and Staff College in Quantico, Virginia. He then returned again to flying as the commander of Detachment 3, 1403d MAS, at Osan Air Base, Republic of Korea, qualifying as an instructor aircraft commander in the C-12F Huron. In 1993, Colonel Dyche completed Air War College while simultaneously serving as the first Air Mobility Command research fellow at the Air University College of Aerospace Doctrine, Research, and Education at Maxwell AFB, Alabama. He most recently requalified in the C-130 and is currently the commander of the 36th Airlift Squadron at Yokota Air Base, Japan.

In addition to USMC Command and Staff College and Air War College, Colonel Dyche is a graduate of Squadron Officer School, Air Command and Staff College, Airlift Operations School, and the MAC Combat Aircrew Training School.

Colonel Dyche is a command pilot with more than 4,000 flying hours in the C-130 and C-12. His decorations include the Meritorious Service Medal with one oak leaf cluster, the Joint Service Commendation Medal, the Air Force Commendation Medal, and the Humanitarian Service Medal.

He is married to the former Yolanda Margarita Davison of Tucson, Arizona. They have two sons, Dana Christopher and Robert Scott.

Preface

From August 1990 through May 1992 I was the commander of the Air Force's smallest and only remote tour operational support airlift (OSA) unit: Detachment 3, 1403d Military Airlift Squadron (Det 3, 19th Airlift Squadron after 1 April 1992) under the Military Airlift Command (MAC). Based at Osan Air Base, Republic of Korea, the detachment operated two C-12F Hurons with seven officers (all pilots including myself), three enlisted support personnel, and three civilian maintenance contractors. The unit primarily provided OSA to Seventh Air Force units in Korea, but also supported other Air Force and Department of Defense (DOD) organizations in Korea and throughout the Far East.

During my tour as the detachment commander, OSA filled a unique niche in the airlift system. In Korea's relatively austere environment, it was often difficult and sometimes impossible for commanders, their staffs, and other key personnel to travel on official business with the necessary speed, safety, efficiency, and reliability they routinely required. Commercial air travel between points in Korea and other Pacific destinations was either nonexistent, too expensive, or not timely. Scheduled military airlift on the MAC channel flights was not much better. Meanwhile, ground transportation in Korea was generally unreliable, usually wasted time, and occasionally downright unsafe. OSA therefore filled the need for the time-critical movement of passengers and, on rare but important occasions, cargo.

Although the detachment fulfilled its peacetime role with a near-flawless operational record, something was missing: the warrior mentality. When I arrived in August 1990 the detachment's planes and personnel were woefully unprepared for war, even with a very real enemy threat only minutes to the north. The aircraft were not properly equipped to operate in a chemical environment nor did the pilots have the necessary training or appropriate aircrew chemical defense clothing. The planes' short-range navigation systems depended on ground-based facilities that were susceptible to denial by enemy and friendly actions during a war. Meanwhile, long-range navigation station signals were often unreliable over the Korean peninsula, potentially leaving the C-12Fs with no electronic means of navigation during wartime. The aircraft also did not have any secure or jam-resistant radios or any defensive systems. In addition, the aircrews did not practice flying under visual flight rules (VFR) or use charts to map read-on flights between Korean bases. Finally, the crews were not proficient in any combat aircrew training (CAT) procedures or techniques, including low-level navigation and nonstandard airfield departure and arrival maneuvers. In short, the planes and personnel were not ready for war.

Even after nearly two years in command, the situation did not significantly improve. The Air Force never modified the planes with any of the improvements needed to survive and operate in a combat environment—there was no money and no one to champion the need. So far as training, the detachment instituted a modest CAT program, but limited flying training hours restricted the detachment from receiving the necessary time to adequately train the aircrews. Still, the unit's personnel better understood the need to "think" combat and combat support airlift.

Fortunately, hostilities did not break out in Korea during my assignment. However, war did come to the Persian Gulf region and Air Force OSA deployed to that area. Unfortunately, those OSA crews were no better equipped or trained than their counterparts in Korea. The eight C-21As and associated OSA personnel that went to Saudi Arabia arrived with no real idea of the mission, no effective command and control, and inadequate training and equipment to operate in a combat environment. As in Korea, OSA forces in the desert were very lucky that they were not attacked for they probably would not have survived, much less successfully completed their critical support missions.

My experiences in Korea and secondhand knowledge of what happened in the Persian Gulf caused me to ponder OSA's "big picture." Although I felt OSA could provide vital wartime support, I knew OSA was not truly ready for war. Instead, I sensed that an executive perk, miniairline, peacetime mentality pervaded operators, planners, and most of all, OSA's users. I wondered if OSA really did have a valid wartime mission and, if so, how could OSA better prepare in peacetime to successfully perform its missions in wartime. In December 1991, my ponderings became a proposal to MAC for a research fellowship. The result is this study.

The first rule of the command-sponsored research fellowship program at the Air University's College of Aerospace Doctrine, Research, and Education (CADRE) is to keep the subject narrow and focused. I plead guilty to violating that enlightened guidance. My original plan was to simply present some ideas backed up by research on how to make OSA ready for war. I naively thought I could limit my study to proposing some equipment modifications, training improvements, and organizational changes. I was wrong. To make educated and realistic proposals for change I found I needed to explain how OSA got to its present state. That meant conducting a great deal of research on OSA's history, from pre-World War I up to the present day. Complicating the research and writing processes during the year were several major changes to OSA including divestiture, rebasing, budget cuts, the C-12F force drawdown, and the proposal to have the United States Transportation Command coordinate scheduling for most DOD OSA resources. Thus, the reader will find, as I did, that there is a great deal more to OSA than one might think.

OSA's heritage is long, proud, and complex and this limited study does not do that legacy justice. Volumes can still be written on the subject. But hopefully this work will shed some light on a small part of the Air Force that is largely unknown, overlooked (except by auditors), or totally forgotten, being an unglamorous, noncombat, support function. Still, OSA has provided critical wartime support to commanders and staff personnel during all of our nation's major wars. With the changes proposed in this study (some of which are already under way) OSA will continue to provide that vital support.

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Acknowledgments

A major research effort cannot succeed without the hard work of many dedicated contributors and this study is no exception. At the top of the list is Dr Doris Sartor, my brilliant editor at CADRE. Dr Sartor's constant encouragement, skillful teaching, insightful suggestions, and tactful prodding are as much responsible for this study's success as anyone.

Much credit also belongs to Mr Ted Kluz of the Air War College, who unhesitatingly took up the unenviable burden as my research advisor halfway through the project. His patient counseling, experienced advice, and discerning recommendations ensured a product that "answered the mail."

Special credit also goes to Col Robert M. Johnston, the director of the Airpower Research Institute at CADRE, who introduced me to the SCATBACK program (operational airlifts of T-39s in Southeast Asia) and encouraged my efforts. Thanks also to his staff members, especially Lt Col Tom Nowak, USAF, Retired, Maj Mike Petersen who gamely tried to keep my project and me on track, and Lt Col Orv Lind who helped immensely during the project's editing phase.

Very special thanks also belong to Maj Gen Robert E. Dempsey, USAF, Retired, former director of staff at Headquarters Air Mobility Command (AMC), and his executive officer, Col Rich Butler, who strongly supported my research with inspired ideas and temporary duty (TDY) orders. In addition, I owe my sincere appreciation to Col Roger Baskett of Headquarters US Transportation Command (USTRANSCOM), who kept me posted on operational support airlift (OSA) changes and who, along with his wife, Mary, provided me with a comfortable room and home cooked meals during my TDYs to Scott AFB, Illinois.

More than 100 other people throughout the Air Force and the Department of Defense contributed to this study but some gave special support. They include Maj John Grimes, Lt Col Ken Byrd, and Lt Col Paul Shutt, at the Air Staff; Lt Col Jim Steele and Lt Col Phil Spiker at the Joint Staff; Lt Col (Sel) Bob Anderlitch, Lt Col Scott Trapp, Col Al Schweizer, and Mr Alan Whisman at Headquarters AMC; and US Army Maj Mike Borland and Capt Robert Marion, as well as US Navy Capt William Roeting, the sister-service OSA experts.

My sincere thanks to Gen H. T. Johnson, USAF, Retired, former AMC commander and commander in chief, US Transportation Command (CINCTRANS), for selecting me for this research fellowship. My gratitude also goes to Gen Ronald R. Fogleman, the present CINCTRANS and AMC commander for his trust, support, and encouragement throughout the past year as well as during my OSA command in Korea.

Two of the finest officers and role models I have ever had the honor of serving under deserve special thanks and recognition. Col Bob Foerster, my former wing commander, placed special confidence and faith in me by choosing me to command the Korean OSA detachment. Col Bob Durham, my wing commander during my tour in Korea, let me run the detachment as I saw fit, with minimal oversight but con-

stant support. Without Colonel Durham's encouragement and generous assistance, I would never have applied for this fellowship nor completed this study.

Finally and most important, I thank my wife, Yolanda, and our sons Dana Christopher and Robert Scott. They endured many hardships, including extended periods of separation, that may have torn apart lesser families. Their steadfast support, faith, and belief made this effort possible.

Chapter 1

The Challenge

The sleek silver and white C-21 Learjet cruised along at 400 knots and 35,000 feet above the barren desert landscape. On board the aircraft was the US Army major general who commanded the airborne division guarding the vital border area and airfield that was this mornings destination. With him were his chief of staff and aide all of them had just attended high-level meetings with senior commanders in the capitol. Secured in the cargo area were three boxes containing highly classified material, the initial defense plans for the allied troops as well as the air tasking order (ATO) for the next 24 hours. The first operational support airlift (OSA) mission of the contingency was under way and going smoothly . . . so far.

When the latest crisis erupted in Southwest Asia and threatened a nation friendly to the United States, the US quickly dispatched elements of the US Central Command (USCENTCOM) to the endangered country. Acting as a show of force to dissuade the neighboring country from fulfilling its promise to "liberate" the US ally, limited USCENTCOM ground combat forces had been flown into an airfield near the border. Meanwhile, command elements were busy setting up shop in the capital, nearly 500 miles south of the ground troops. Unfortunately, secure communications and quick, reliable transportation were very limited between the headquarters and forward deployed troops. However, a small OSA element of four C-21A Learjets was included as part of the initial force deployment package. The planes had departed the continental United States (CONUS) 48 hours after receiving the deployment order, complete with their civilian contractor maintenance team. Now, just a few days after arriving in the area of responsibility (AOR), OSA pilots were flying their first mission.

The Air Mobility Command (AMC) operated the C-21As, which were the entire OSA detachment. AMC regulations defined the detachments mission as providing "priority movement of personnel and cargo with time, place, or mission-sensitive requirements . . . during wartime, contingencies, and peacetime."[1] While the crews and aircraft were highly experienced and competent in their peacetime mission, neither were proven in supporting combat operations. Their introduction to combat support would prove adverse.

Taking off from the capital before dawn, air traffic control (ATC) had provided initial course vectors to back up the onboard tactical air navigation (TACAN) system. For the first 200 miles, the C-21 flew at 35,000 feet with ground-based radar to help out. But, as the C-21A neared the border area, it exceeded the range of ground-based navigational and radar aids. Soon, the planes two-person crew began having a difficult time navigating over the featureless landscape. Unfortunately, the C-21A lacked a modern inertial navigation system (INS) to precisely determine its location. With only a single universal navigation system (UNS) providing unreliable, imprecise positional information, crew members depended on an orbiting airborne warning and control system (AWACS) aircraft to monitor mission progress. As the sun came up over the horizon and the C-21A neared the border area, the pilot slowed the aircraft to 300 knots and descended to 2,000 feet to avoid enemy radar. Because the potential enemy air threat was within easy striking distance of the

friendly airfield, the US TACAN station at the airfield was turned off. So, the C-21A crew resorted to map reading for the missions final 150 miles. However, crew members had never been trained for low-level flying and navigation. With few landmarks to guide them and mark their route, crew members began feeling uneasy but, due to their important passengers and cargo, pressed on towards the airfield.

Unfortunately, the C-21A was nearly 10 miles off course as it neared the border and therefore missed the airfield completely. The alert AWACS controller noticed the potential problem and tried to notify the C-21A crew but normal frequencies were suddenly being jammed. With no secure or jam resistant radios, the Learjets pilots did not hear the AWACS threat call. Meanwhile, the chrome silver leading edges of the C-21s wings combined with the high gloss white body paint sharply reflected the morning suns first rays. The bright glint caught the eyes of the enemy fighters orbiting over their territory. While the C-21As crew members tried helplessly to figure out their exact position, the AWACS controller futilely attempted to contact the OSA aircraft, all to no avail. Prevented by the rules of engagement (ROE) from flying or shooting across the border, the AWACS aircraft could not use friendly F-15s to intercept the approaching enemy fighters. One minute after unknowingly crossing the border, the C-21A suddenly found itself bracketed by two enemy MiGs. Now the crew faced the choice of whether to follow the fighters and land at an enemy field or try to flee back towards the border. With no defensive systems on board to warn of impending antiaircraft gun or missile threats, and no training in evasive actions, the crew decided it would be suicide to turn around. So, the C-21A landed at an enemy airfield 20 minutes after crossing the border. The first prisoners of war (POW), along with numerous classified plans, were now in enemy hands.

Although the above scenario is fictitious, it is entirely plausible. Indeed, such a mission could easily have occurred during the early days of Operation Desert Shield with equally devastating results, or worse. The undeniable fact is that operational support airlift forces were not properly prepared for the wartime missions and environment they faced in the Persian Gulf.

OSA successfully performed its assigned missions in the Gulf thanks not to proper preparation but because of the outstanding professionalism, initiative, adaptability, flexibility, and "can-do" attitude of its personnel. In addition, the success came where the threat was minimal, time was available to install new equipment and train air crews, and, at least initially, where OSA forces were generally left alone to accomplish a very limited mission. Such a relatively benevolent environment may not greet the next real-world OSA deployment assuming OSA forces are even used in future contingencies.

The Persian Gulf experiences therefore raise an important question: Does the Air Force need OSA in wartime? If the answer is no, then there is no legitimate justification to maintain OSA forces in peacetime. However, if OSA is needed during contingencies, then the corollary question becomes: How can OSA better prepare in peacetime to perform its mission during wartime?

With today's rapidly dwindling resources and changing threats, it is most prudent to examine OSA as a part of the Air Mobility Command and Air Force restructuring. While the Air Force "sold" OSA to Congress with "pilot seasoning" as its primary peacetime purpose, OSA is, in reality, little more than an air taxi service for very senior military and civilian government very important persons (VIP). However, the Department of Defense (DOD) made it

clear in 1985 that peacetime OSA was to be "based solely on wartime readiness requirements."[2]

But what exactly are the wartime requirements for OSA? A review of the appropriate AMC and unified command operations plans (OPLAN) shows few, if any, specifically stated requirements for OSA forces. Also, there is little agreement between the OPLANs, stated theater OSA requirements, and current or projected OSA inventory. Meanwhile, the experiences of OSA forces that deployed to Operation Desert Shield/Desert Storm reveal an appalling lack of prior thinking about what these forces would or even could do in the war zone, especially one so austere. Command and control was a particular problem with different organizations attempting to run the OSA operation without efficient coordination. Deficiencies in aircrew training and aircraft equipment also stood out. Under these difficult circumstances OSA still "got the job done." Unfortunately, it took quite some time and consternation to figure out what that job was and how best to do it. In the next contingency, there may not be enough time.

Have the lessons learned in the Gulf made their way back to the units? Have the necessary changes to training and equipment been made? Are there other changes that should also be made to better serve the customer in wartime? What should OSA's role be in wartime? Should we expect or even desire OSA forces to operate in anything higher than a low-threat environment? On the basis of the DOD implementing directive, we must answer these questions to justify OSA's very existence.

At the same time, what does OSA's wartime mission mean during peacetime? Is OSA realistically training in peacetime for its wartime uses? With the large reductions in flying time, is pilot seasoning still OSA's main reason for its peacetime existence or is seasoning even a viable by-product anymore? How can the Air Force "bank" young pilots on one hand and allow numerous general officers and high-ranking supervisors to fly OSA aircraft and use up valuable training time? Additionally, reduced budgets may mean taking some OSA aircraft out of service. How will such reductions affect AMC's and the theater commands' ability to serve their customers and still train pilots? Has AMC's divestiture of OSA forces to the major commands (MAJCOM) affected both peacetime and wartime OSA readiness and missions? These questions must be answered to train and employ OSA in peacetime to maximize its readiness and usefulness in wartime.

This study examines these issues as OSA strives to adapt to tomorrow's changing needs and resources. Only by clearly defining OSA's wartime roles and missions can it properly build and train the necessary forces in peacetime. History often provides valuable insights into current issues. Chapter 2 traces OSA's roots from World War I through 1974 with emphasis on OSA during World War II and Korea. Chapter 3 chronicles the turbulent period from 1975 through 1983, including OSA's consolidation under the Military Airlift Command (MAC) in 1975 and the lengthy process to acquire today's modern OSA aircraft. In 1984, MAC received the first of 120 new OSA aircraft, and chapter 4 begins with their delivery and assimilation into MAC's

worldwide OSA system. The chapter also covers OSA operations in the late 1980s and early 1990s and concludes with a discussion of the recent OSA divestiture from MAC's successor, Air Mobility Command, to the various MAJCOMs. Also included is how OSA operated under MAC/AMC and how OSA was equipped, organized, commanded, and controlled in a peacetime environment. Unfortunately, a publication deadline prevented a thorough investigation of OSA's operations since divestiture. Chapter 5 explores OSAs wartime experience in the two most recent major conflicts—Vietnam and the Persian Gulf (Operations Desert Shield and Desert Storm). Operations, training, and command and control are compared and contrasted to see what worked well, what did not, and why. Chapter 5 also presents lessons learned from the unit and joint command perspectives. Chapter 6 recounts OSA's identified strengths, weaknesses, requirements, and force capabilities. Next, the chapter discusses OSA's roles and missions during peacetime by looking at airlift doctrine and how it applies to OSA. The chapter then offers a well-defined wartime role for OSA along with six clearly delineated missions. Finally, the chapter shows how OSA can and should better prepare itself in peacetime to perform its wartime role.

A classified (Secret) appendix is included under separate cover. The appendix reviews current OPLANs, theater component Air Force requirements, and recent unit designed operational capability (DOC) statements to ascertain the wartime roles and missions that OSA is expected to accomplish and points out discrepancies between documents.

Notes

1. Military Airlift Command (MAC) Regulation 23-12, *Operational Support Airlift (OSA) Military Airlift Squadrons (MASs) and Detachments (Dets),* 28 November 1986, 1.
2. Department of Defense (DOD) Directive 4500.43, *Operational Support Airlift (OSA),* 30 October 1985, 1.

Chapter 2

The Heritage of Operational Support Airlift—1916 to 1974

If one accepts the current roles and missions of OSA today as small airlift aircraft carrying limited numbers of people and small amounts of cargo over relatively short, intratheater distances, then OSA's genesis began in the very early days of manned flight. The very first "airlift" flight can be considered an OSA mission. On 9 September 1908 Lt Frank P. Lahm rode as a passenger on a short flight in a Wright Flyer. Three years later, in September 1911, Lt Thomas D. Milling set a world record when he piloted two passengers on a flight lasting nearly two hours.[1] While OSA's beginnings are perhaps less than dramatic, OSA has come a long way in the past 85 years.

Operational support airlift in today's Air Force is really an outgrowth of several missions and numerous aircraft developed for purposes other than OSA. Observation, liaison, command and control, staff and executive travel, pilot proficiency flying, command mission support, utility transportation, indirect support, and administrative airlift are all ancestors of OSA.

This chapter traces OSA's history from its early days before World War I up to consolidation under the Military Airlift Command (MAC) in 1975. Beginning with its use in Mexico in 1916 and during World War I as an observation platform, early aircraft doubled as a staff travel and courier vehicles—OSA's earliest predecessors.

The interwar years brought many airlift advances and OSA-type planes were prominent in the progression. Airlift began its development following the war and the staff support mission played a significant part. During the 1920s and 1930s, the staff support mission was closely tied to the development of the liaison-type aircraft and mission. Also in the 1930s, staff support played a major role in airlift's continuing evolution.

World War II changed the nature and numbers of small staff support planes. Spurred by massive new staffs, thousands of small support planes entered service, mostly divided among six primary aircraft. Although most of these light planes were retired by war's end, many C-45s continued serving the Air Force well into the late 1950s, including supporting combat airlift needs in the Korean War. In the late 1950s, U-3s replaced the retiring C-45s and served as the Air Force's primary propeller-driven small utility transport aircraft for 15 years. However, in the early 1960s, the Air Force acquired its first jet staff support plane—the T-39. Although first used as a pilot proficiency trainer, the T-39 later

became the heart of small staff support airlift and the focal point for the consolidation of Air Force administrative airlift under MAC.

While OSA's history may have begun with the inaugural passenger ride in 1908, the first useful examples of the OSA-type mission did not occur until World War I. From then, through World War II and Vietnam, until today, OSA's predecessors have grown and shrunk in numbers, changed aircraft, and changed names—several times. While today's OSA is usually associated with peacetime operations, its roots actually began in times of conflict.

The Early Years: 1916–1918

The first operational uses of the airplane included flying the OSA mission. In 1916, Brig Gen John J. Pershing led the punitive expedition into Mexico which used military airplanes in several ways. Because the Army Signal Corps's (ASC) aircraft were underpowered and thus limited to carrying small loads, the ASC planes often transported mail and urgent official dispatches.[2] During World War I the airplane's functions generally fell among three expansive categories: counterair operations against hostile air actions; interdiction and close air support against enemy ground forces and facilities; and activities supporting friendly ground forces, cited as "observation aviation."[3] The function not included was the dedicated airlift of large amounts of cargo or personnel. True airlift aircraft were not yet a reality although converted bombers were occasionally used as "airlifters."

Observation aviation included several different functions such as artillery fire control, aerial reconnaissance and photography, and contact-patrol flights with ground units to keep commanders posted on the positions of their troops during movements. But equally important, the Army Air Service (AAS) also considered "the rapid transportation of staff officers, messages, and the like, for liaison purposes" as part of the observation mission.[4] In the French war zone, US pilots frequently transported high-ranking officers and couriers, often reducing wasted travel times from several hours to just minutes.[5] Additionally, liaison aircraft carried critical messages between command centers, ensuring secure, nongarbled information quickly reached the proper authorities.

Also during World War I the airplane transported wounded personnel. In February 1918 the AAS modified a Curtiss JN-4 Jenny to carry an injured pilot in the rear cockpit. By July 1918 every military flying field in the CONUS was ordered to maintain an "air ambulance."[6] In France observation airplanes often transported wounded soldiers and pilots to rear-area facilities.

Thus, by the end of World War I, the Army Air Service recognized the time-critical movement of personnel, messages, and cargo as an important role for the airplane and required aircraft dedicated to that mission. The Army Air Forces Historical Study (AAFHS)-44 entitled *The Evolution of the Liaison-Type Airplane: 1917–1944* and written in 1944 by Capt I. B. Holley (later a major general and noted historian) concluded, "[World War I] experience indicated that observation aircraft were more valuable as liaison agents for unit commanders than

as a means for artillery-fire control during the periods of maneuver."[7] As the US entered the interwar years, the relative portions of new aircraft accepted into the inventory substantiated the importance of observation aviation. In 1920 the Army Air Service received 1,132 new planes: 20 bombers and 112 pursuit aircraft, compared with 1,000 observation planes.[8]

The Interwar Years

OSA developed along two different mission lines during the years between the two world wars. The liaison and staff transport roles of the observation mission continued but most effort went into small aircraft (pilot plus one or two passengers) with the emphasis on reconnaissance and artillery fire spotting. Meanwhile, the staff support mission (as OSA was known in those days) was a major impetus for airlift's general development. The idea of a dedicated airlift aircraft carrying personnel and cargo gained favor, first with the concept of converting a bomber into a transport.

Early Airlift

Shortly after the war ended the Army Air Service ordered 10 bombers from the Glenn L. Martin Company. Meanwhile, the Martin Company produced plans for placing 10 seats in the bomb bay area and selling this transport version, the largest passenger plane available at that time, to commercial companies. Col Thurman H. Bane of the Air Service suggested commercial aviation would benefit if the AAS bought one of these aircraft and used it for troop transport. One of the bombers in production was modified, designated the XT-1, and assigned to McCook Field, Ohio. Unfortunately, several of the original bomber's design features left it unsatisfactory as a general troop transport, so the single XT-1 was used instead to carry Army personnel, particularly enlisted aircraft mechanics, between bases to repair aircraft. Although the mechanics were not commanders or staff personnel, the worker's unscheduled, short-notice transport is another early example of an OSA-type mission.[9]

With no satisfactory transport available in the United States in 1920, the Army Air Service turned to Europe and Holland's Anthony H. G. Fokker. The AAS ordered two Fokker F-4s with eight removable seats in an enclosed cabin. The F-4 could carry passengers or cargo. Although the F-4 could be used as a staff transport, the real significance was its foreign origin. Several critics complained the Army Air Service was directly depriving US companies of military sales and indirectly promoting foreign products to commercial carriers. The Army Air Service replied to the critics by saying it was simply buying the best equipment available and since no American product met the requirements, the AAS had gone abroad. This may be the first example of the "buy American" conflict but it would not be the last.[10]

Between 1922 and 1926 the Army Air Service used the F-4s, some De Havilland DH-4s, various converted bombers, and other assorted aircraft in a regularly scheduled military airlift service known as the Model Airways. This

service operated between 10 airfields in the mideast, central midwest, and down into Texas. Although differing from OSA by its set schedule, the Model Airways service transported high-priority government officials and cargo between the airfields and was considered vital to the nation's defense.[11] The air cargo usage alone saved the government thousands of dollars from reduced express railway charges. Even greater benefits were the monetary savings for the government and time savings for the officials who flew military aircraft instead of using commercial ground or air transportation.[12]

Although the Army Air Service considered the Model Airways a great success, Congress considered the system a threat to private enterprise. Accordingly, Congress passed two pieces of legislation: the Air Mail Act of 1925 and the Air Commerce Act of 1926. With these acts, combined with the congressionally directed reorganization of the Army Air Service into the Army Air Corps (AAC) in 1926, Congress generally removed the military from aviation practices that commercial enterprise could supply. Thus ended the Model Airways program and with it reliable, regular transport of government officials and high-priority cargo.[13] This was not the last time Congress would intervene with the OSA mission or question the competition between airlines and operational support airlift.

During the short life of the Model Airways, Army Air Service planners learned a great deal. They recognized the need for new thinking about the value of dedicated transport aircraft and for a new aircraft designed from the outset to carry both passengers and cargo. According to Dr Genevieve Brown in her 1946 paper for the Air Technical Service Command (ATSC) entitled *Development of Transport Airplanes and Air Transport Equipment*, the 1923 *Field Service Regulations of the United States Army* finally recognized air transport as a part of the theater transportation system. Dr Brown quotes the regulations as stating theater airplane employment was "ordinarily limited to emergency transport of mail, ammunition, staff officers, carriers, and possibly small detachments."[14] Based on this recognition of air transport, each air base's service squadron was authorized two transport aircraft. These early words concerning airlift doctrine more closely resemble the time-critical OSA mission rather than a theory of general air transport employment.

In July 1924 the Army Air Service finally ordered a new aircraft to go with the new theory of air transportation—the C-1. The AAS ordered nine transport airplanes (C-1s) from the Douglas Aircraft Company. However, these nine planes were not enough to meet the growing demands for air transportation, so the AAS purchased 19 more C-1s in 1926.[15] The single-engine C-1 carried two crew members in an open cockpit and eight passengers and light cargo in an enclosed cabin. Although not an aircraft built solely for the staff support mission, the C-1's load capacity did approximate that of today's C-12F.[16]

By 1930 more than 30 major airlines were flying passengers and cargo in the US using nearly 650 aircraft, of which 400 were light, single-engine planes. With the great appeal for passenger travel and airmail, the aircraft in demand were light and fast rather than large and slow. Designers therefore developed small, quick planes capable of carrying four to 12 passengers along with a load of mail.[17] The military eventually recognized the value of these

commercially developed aircraft for general transport purposes where no specialized design was necessary. The Army Air Corps Technical Committee declared in 1929 that "the commercial demand for this type of craft [transport] insured its progressive development and that military funds for experimental processes should be allotted only for the projection of specialized military designs." Even the assistant secretary of war agreed "when he declared that commercial concerns would take care of . . . transport types and that experimental funds should be devoted to the development of purely military types."[18] Although many military transport aircraft purchased since these policies were stated were not commercially developed, the precedent set in 1929 was important for OSA. Since then, all OSA-type aircraft procurements have followed this commercial development tradition.

Another important precedent for later OSA procurements occurred in 1930. The Fokker Corporation offered the F-XIV and the Procurement Board recommended buying 20 aircraft. Besides being a good transporter of bulky cargo and aircraft engines, there was another influencing factor in the choice of the F-XIV:

> The Fokker Corporation was in dire financial straits because of the failure of commercial operators to purchase its airplanes. The Board believed that a contract for 20 transports would restore the solvency of the company, at least temporarily. The reasoning behind this course of action was evident when Major C. W. Howard, Chief of the Experimental Engineering Section, wrote, *Something has to go into the Fokker factory or have it go into the wall (this is all very confidential Procurement Board discussion and not to go any further . . .) It by the way has already been approved by the Secretary.*[19]

Thus, with the acquisition of the Fokker transport (Air Service designation Y1C-14), the commercial "bailout" precedent was set. Similar help for an ailing commercial aircraft company would occur again in the 1980s during the selection process for OSA's C-21A.

The Fokker Y1C-14

In October 1931 a very forward-looking Air Corps officer suggested a major innovation in transportation thinking. Maj H. J. Knerr, chief of the Field

Service Section at Wright Field, suggested that we establish a transport group with headquarters at Wright Field along with four subordinate squadrons, one at each of the four air depots. The transport's mission was to move parts and supplies between airfields and eliminate the need to maintain large stock inventories at various bases. "The transport squadrons of the transport group were to be distinct from the service squadrons of the tactical group, the latter continuing under the control of their individual station and group commander."[20] Soon thereafter "the Chief of the Air Corps directed the establishment of the First Provisional Air Transport Group," using the basic organization Major Knerr envisioned.[21]

The Y1C-14 and similar small transports were adequate for light load staff transportation or the distinguished visitor (DV) support mission but the planes were insufficient to meet the air depot's mushrooming airlift needs. The Field Service Section petitioned for the new Y1C-24s but Brig Gen Oscar Westover, assistant chief of the Air Corps, turned the request down. General Westover "claimed that the tactical organizations used the airplanes for the transportation of mechanics in all movements by air. Any transferal of the Y1C-24s would therefore be a discrimination against the tactical units in favor of the supply service."[22] General Westover's notion that tactical organizations should own and operate their own airlift to meet their internal needs is still supported by many in the Air Force. That belief has affected OSA to a large extent, most recently with the 1992–93 transfer of OSA resources to their respective host bases and commands under the "one base, one boss" concept.

The American Airplane Corporation Y1C-24

Unfortunately, the Y1C-24 and even newer transports still fell short of meeting the Army Air Corps's rapidly growing air transportation requirements. In an effort to alleviate the problem, the chief of the Army Air Corps ordered the purchase of 18 modified Douglas DC-2s (designated the C-33) in September 1934. With a useful load of over 6,000 pounds, the C-33 could also carry nine litter patients or 12 passengers in commercial-type seats.[23] The C-33 repre-

sented a great leap forward for airlift in general, and cargo carrying planes in particular. However, the staff support mission was not forgotten.

In January 1935 a Board of Officers forwarded a list of desired features for a dedicated personnel transport, closely resembling that of today's OSA planes. According to the chief of the Army Air Corps, the tactical mission of the new airplane was the "high speed transportation of key personnel necessary to enable tactical units of the General Headquarters to function immediately upon landing at a new location . . . and, in emergencies, the evacuation of the sick and wounded."[24] The next month, the commanding general of General Headquarters (GHQ) Air Force "requested the purchase of a Douglas transport, the cabin equipment to include desks, filing cabinets, and other office facilities." The request was approved and a single 10-passenger Douglas DC-2, designated the XC-32, was purchased in October 1935. A few months later in January 1936, two more DC-2s modified for use by the assistant secretary of war were bought and designated as C-34s.[25]

Later in 1936 the Army Air Corps acquired three more "passenger transports for command and staff personnel."[26] However, the 12-passenger Lockheed Electra, christened the C-36, did not come about easily. A controversy arose over airplanes purchased "off-the-shelf." Gen H. H. ("Hap") Arnold, assistant chief of the Army Air Corps, set another precedent for airlift in general and OSA in particular when he stated:

> that while airplanes purchased *off-the-shelf* might not be practical for the military cargo type they might well serve for military passenger usage. In future cases similar to this, "the Air Corps might well attempt to purchase commercial aircraft if the design were applicable to the purpose without change and determine once and for all if such a policy could be adopted."[27]

With few exceptions, all OSA-type aircraft purchased since General Arnold's decree have indeed been purchased off-the-shelf from commercial companies with little, if any, military involvement in the plane's development.

Meanwhile, the four provisional air transport squadrons formed in the early 1930s under Material Division became Regular Army Air Corps units in June 1935. Unfortunately, the chief of the Army Air Corps's shortsightedness also eliminated the overarching First Provisional Transport Group which controlled the squadrons. The resulting lack of centralization eroded the efficiency of the depot supply system. So, two years later in May 1937, the Army Air Corps activated a permanent transport group at Wright Field.[28] The 10th Transport Group consisted of five transport squadrons which were used for both intradepot and interdepot air supply.[29] However, the Material Division centrally controlled these planes, and they were not available for use by individual commanders in the field or at AAC bases for staff support needs.

In the late 1930s the issue of airlift centralization surfaced again. The Army Air Corps formed another five-squadron transport group—this one directly under the offensive aviation strike forces of the GHQ Air Force. Two squadrons were based overseas (Panama and Hawaii) while the other three squadrons were split into flights and assigned to stateside GHQ Air Force bases for tactical support. This dual airlift system—logistical support (10th

Transport Group under the Material Division) and tactical support (GHQ Air Force units)—meant two separate organizations were responsible for airlift under two different chains of command. Brig Gen Augustine W. Robins, chief of the Air Material Division between 1935 and 1939, objected to this dual airlift system because it resulted in a limited number of transports spread among too many airfields. Instead, General Robins suggested all airlift be placed in one organization—the 10th Transport Group (under Material Division). He envisioned a centralized airlift system sending the transports out from a few strategically located airfields to carry out requests from the GHQ Air Force or any other Army Air Corps units. The remainder of the time the planes could be used for hauling supplies and passengers around in a logistical support role. Thus, the limited number of transports could be used more efficiently. Unfortunately, General Westover, chief of the Army Air Corps since 1935, declined Robin's ideas. GHQ Air Force kept its transports and also asked the 10th Transport Group for support when needed.[30] Airlift would not be brought under a single command until 40 years later, although the consolidation issue would surface again early in World War II.

Although staff support airlift still did not exist as an official role or mission, Army Air Corps's planners did recognize the need for bases to have their own aircraft to provide for base transportation. In March 1937 the AAC determined the number of airlift planes required and who should own them. Out of a total request for 149 transports, 63 were designated to go to GHQ Air Force, 50 to the Material Division, and 36 to the individual air bases.[31] The GHQ planes, forerunners of today's intratheater airlift, were meant for direct combat support. The Material Division's planes, precursors to today's intertheater airlift, were to be used primarily for logistical support between bases. The remaining 36 planes were in a very real sense the ancestors of OSA since they primarily were intended for short-haul missions supporting base passenger and light cargo needs.

Unfortunately, Secretary of War Harry Woodring rejected the transport aircraft request in August 1937 due to the high price tag and allowed only 36 new planes (C-39s) to be purchased in 1938 and none in 1939. Material Division's 10th Transport Group got 32 of the planes with GHQ receiving three.[32] That left just one of the new 16 passenger planes for base staff support. Bases were left to make do with old, small, and less efficient cargo planes, obsolete bombers converted for cargo carrying, or tiny observation/liaison aircraft. The AAC did not purchase any small (six to eight passenger) OSA-type aircraft for the bases nor were any specifically requested.

As the US entered World War II, airlift was fragmented between two commands—Air Force Combat Command (AFCC) and the Air Corps (AC)—subordinate to the newly created (9 March 1941) Army Air Forces (AAF). AFCC replaced GHQ Air Force and thus controlled combat support airlift such as the troop carriers. Meanwhile, the Air Corps exercised control over all other AAF activities.[33] Included under direct control the chief of the Air Corps was the new (January 1941) 50th Transport Wing headquartered at Wright Field, Ohio, which swallowed up Material Division's old 10th Transport Group.[34]

The Douglas C-39

Just where base and staff support airlift fit in was not made clear. On the one hand, base support airlift belonged to the Air Corps since the planes were not directly combat support and therefore not part of AFCC. On the other hand, the base transport planes were under command of the base commander and therefore not subject to the requests of any centralized logistical control such as the Air Corps's Material Division. In effect, base and staff support aircraft constituted a third source of airlift, one subject mostly to the whims of the various base commanders. However, there was still another source of base and staff support airlift for commanders: the liaison airplane.

The Development of the Liaison Aircraft and Mission

The liaison mission developed very slowly between the first and second world wars. In the shadow of the observation and reconnaissance missions, liaison did not truly come into its own until the outbreak of World War II. During the preceding 23 years since the World War I armistice, few agreed on what observation's role was. So, it is not surprising that the definition of liaison, much less liaison's mission, received little attention. Still, the AAF developed aircraft for the observation and liaison missions, and these planes were often used by commanders in an OSA-type role for base and staff support needs, including proficiency flying and senior officer transportation.

Since the liaison mission was considered part of the observation role in aviation, it is not startling that liaison's development was directly tied to observation. Unfortunately, no one seemed to have a clear understanding of just what functions were included in the term "observation aviation."[35] Observation and liaison aircraft design suffered from this uncertainty.

The first attempt at an infantry liaison plane was the experimental X-IL-1, a two-place, single-engine aircraft. An outgrowth of a modified De Havilland DH-4, the X-IL-1 flew in 1921 at McCook Field and was the first of several aircraft design attempts over the next several years. Although known as corps observation planes, the X-IL-1s were noted more for their all-metal fabrication than as good examples of tactical function.[36]

In 1924 the Army Air Service held an observation airplane competition which drew a number of aircraft designs with the Curtiss O-1 and Douglas O-2 winning the trials. The aircraft companies soon produced more than 100 O-1s and O-2s each. With continuous modifications and numerous model name changes (through Douglas O-25 and Curtiss O-26), these aircraft continued as the standard Air Corps observation planes through 1930 with some still in use as late as 1935.[37] None of these early observation planes were very adequate for liaison or staff support missions since they were specifically designed to carry just one observer. However, the planes could, if needed, carry one passenger or light cargo in the observer's open cockpit position. So, with many O-1s and O-2s in the Army Air Corps's inventory, these planes were no doubt often used in a limited staff support role.

By early 1929, rapid strides in aircraft performance prompted the Army Air Corps's Technical Committee to divide observation aviation into two broad categories—strategic and corps/division. Army strategic observation aviation would use heavier, long-range, twin-engine planes. Meanwhile, corps and division observation aviation would concentrate on tactical missions using smaller, single-engine aircraft. In March 1929 the office of the chief of the Air Corps (OCAC) created the Observation Board. This board consisted solely of Army Air Corps officers to "determine the tactical requirements of a corps and division airplane upon which to base a directive for experimental design and development," according to Captain Holley in AAFHS-44.[38]

The Observation Board decided the new airplane should support the mission of Army Air Corps ground observation as found in official doctrine. While the emphasis was understandably on reconnaissance, photography, and cooperative action with friendly ground forces, the staff support mission was included under special command and message missions. Both the Observation Board and the chief of the Air Corps agreed the new plane should be fast and maneuverable. Though the OCAC felt the plane should be rugged enough to operate from unprepared fields near the front, the Material Division did not include such a specification in the final proposal. Also, instead of requiring a short landing role to aid in unimproved field operations, Material Division simply set a required landing speed in the contract which was much too high to enable landings on small fields.[39]

The next 10 years saw observation development lag far behind the more glamorous roles of bombardment and pursuit aviation. More boards met and made changes to the years' procurement of observation planes but innovation was rare. One exception was the idea of a three-place observation airplane offered in 1933 by a young officer in the OCAC, Maj Carl Spaatz. The third seat would be used by a separate aerial gunner to increase the observer's concentration. However, the extra position offered another advantage as it "would provide space for a staff officer on command missions," concluded Captain Holley.[40] A three-place plane would also allow two passengers or extra cargo on staff support missions. Unfortunately, Material Division rejected Spaatz's inspiration as "impractical and necessarily heavy, costly, and cumbersome."[41] However, Spaatz's idea eventually found support on the Gen-

eral Staff and finally, in December 1934, the adjutant general approved acquisition of an experimental, three-place ground force observation plane.[42]

A new observation aircraft design competition in 1935 saw North American Aviation win with its O-47, a midwing monoplane. The Observation Board liked what it saw and "declared that the airplane met the requirements for an observation airplane more fully than any hitherto submitted."[43] Material Division still did not agree with the board's conclusion and tried to solicit proposals for both single-engine, two- and three-place planes as well as a twin-engine, three-place aircraft. However, the Observation Board liked the O-47 so much that the OCAC overruled the Material Division and dictated a three-place plane. The single versus twin-engine controversy continued until 1937 when the OCAC told the General Staff the Air Corps was satisfied with the single-engine O-47 and saw no need to develop two distinct aircraft.[44] The O-47 was so well thought of that more O-47s were built than any other observation aircraft between wars.[45]

Despite all the emphasis by historians on the Air Corps's bomber-versus-pursuit acrimony, observation actually fared well in the 1930s. In 1935 the Air Corps owned slightly more than 1,000 airplanes. Of those, the average number of observation aircraft flying was 308, second behind pursuit's 397 aircraft, and well ahead of the 205 primary trainers and 155 bombers.[46] Flight time was analogous as well. The flying hours for the January through June 1936 time frame were:[47]

TYPE	*HOURS*
Observation	54,982.3
Pursuit	58,652.3
Bomber	32,608.0

However, such figures are somewhat misleading since observation planes had little interaction with field units and seldom participated in field exercises with the troops. According to AAFHS-44, "Observation planes were extensively used for tow-target work and as personnel transports in cross-country flight, not to mention the number of hours marked up to observation which were in reality devoted to *getting in flying time*."[48]

Since observation aircraft were relatively plentiful and did not have the clear-cut peacetime training programs that the bombers, pursuits, or trainers did, the observation planes made good proficiency aircraft. They also offered an excellent means of getting in cross-country time while providing a source of transportation for senior officers and staff members, or really anyone who needed a ride somewhere. The idea of providing executive transportation as a by-product of proficiency flying was an important concept that would continue in one form or another for quite sometime. This linkage would be the basis for a large part of OSA-type operations until the T-39s were retired in the mid-1980s.

Another idea that caught on, albeit slowly, was in the area of aircraft procurement, especially liaison and transport planes. As discussed earlier in

this chapter, the concept of buying commercial aircraft instead of ordering specialized military planes was first proposed in 1929. Following the lead with transport aircraft, Material Division investigated purchasing a light trainer/observation aircraft from commercial sources instead of designing and building one from scratch. Unfortunately, a number of difficulties, as well as a general lack of innovation, caused Material Division to reject the idea so far as a liaison plane was concerned.[49] It would be 10 years until the US Army Air Corps in general, and the Material Division in particular, changed their stances and accepted commercial aircraft in lieu of planes specifically designed for the military liaison work. Necessity is sometimes the mother of innovation as well as invention.

If the US was lacking in enthusiasm, the French and Germans were not so hesitant to adopt and adapt commercial aircraft for staff and liaison functions. In its 1932 field exercises, the French Army often used light airplanes. AAFHS-44 noted "small, touring aircraft, piloted by their owners, members of the air reserve, were used for staff and command liaison agents and couriers."[50] Meanwhile, the Germans had come up with a small liaison/observation plane, the Fieseler Fi-156 Storch. Specifically meant for short, unprepared fields, the commercially developed, three-seat plane was even shown off at the International Aviation Meet held in Zurich in 1937.[51]

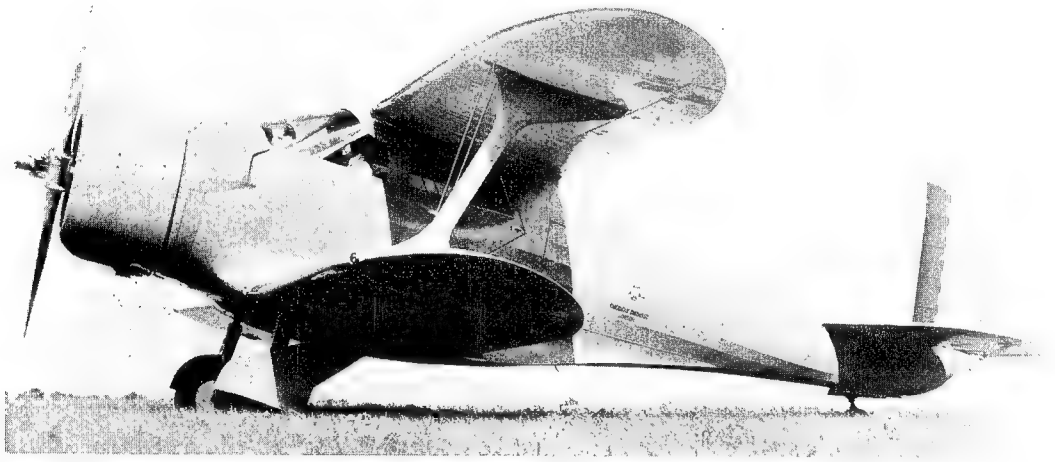
The debate and discussion within the Army Air Corps over the roles of observation and liaison, as well as the proper design of the aircraft to accomplish the missions, persisted right up to the US's entry into World War II. One common theme throughout all the studies and boards was that liaison planes would be used, among many other roles, for command and courier missions and as transportation for commanders and staff officers.[52] However, by the late 1930s, it became obvious that small two- or three-seat liaison planes would not be adequate for the ever-expanding staff and administrative airlift requirements. Still, much of OSA's heritage is due to the development and use of the liaison and observation airplanes before and even during World War II. Today's OSA mission of short-notice command and staff transport truly has its roots in the liaison/observation history.

Utility and Cargo Aircraft Development in the Late 1930s

In 1936 OSA reached another milestone when the staff support aircraft was recognized as a distinct type of cargo airplane. In June a Board of Officers issued revised characteristics for two separate types of passenger transport planes, both with two engines. The heavy class was to have a gross weight of at least 11,000 pounds and be capable of carrying at least 12 passengers. The light class was to weigh less than 11,000 pounds but was to carry at least four passengers. According to Dr Brown, the aircraft was built for the rapid transportation of command, staff, and other personnel. The light plane's flight characteristics included a high speed of 200 mph at 5,000 feet, cruising speed of at least 170 mph, cruise endurance of not less than four hours, and the ability to clear a 50-foot obstacle within 1,800 feet on takeoff. However, the

Air Corps did not sign a contract with Lockheed until May 1938 for 13 small capacity high speed airplanes. Unfortunately, 10 of the 13 new C-40s were modified for use as twin-engine trainers so only three ended up as transports.[53]

Soon thereafter, the Air Corps procured another staff transport plane, although for an unusual reason. The secretary of state requested a single-engine, four- or five-passenger plane to be used by the US Embassy in London. The contract was awarded in February 1939 to Beech Aircraft Corporation for three planes to be flown by personnel at the US embassies in London, Berlin, and Rome. Already somewhat antiquated by commercial standards, the biplane YC-43 carried four passengers but was plagued by a history of structural problems.[54] However, later models of the C-43 would see much service during the war as small staff transports.



The Beechcraft YC-43 Assigned to the US Embassy in London in 1939

As America approached the eve of World War II, the Air Corps still lacked a sturdy, efficient staff transport aircraft. Fortunately, in March 1939, General Arnold, now chief of the Air Corps, "proposed that suitable airplanes should be made available to the respective commanders for use in the discharge of their duties. The requirements of this type included long range, moderate speed, thick weather flying qualities, two engines, and accommodations for several passengers." Arnold concluded that the use of bombers for this mission was inadequate because "such combat aircraft were not designed to fulfill the requirements of the corps area commander."[55]

The Material Division already had an aircraft under test and evaluation which seemed to fit the bill: the Beech Model 18S. On 1 July 1939 Beech received a contract award for 11 Model 18Ss to be designated the C-45. The all-metal, low-wing, twin-tailed monoplane "had provision for 3 chairs and a transverse couch." These early C-45s enjoyed flying characteristics that included an operating speed of 200 mph with 75 percent power at 5,000 feet

altitude and a cruise range of over 1,000 miles at 160 mph at 5,000 feet.[56] Probably without realizing it, the Air Corps had procured the first of what was to become its primary OSA-type staff transport aircraft for the next 20 years. The C-45 would play an important, if largely unsung, role in the next two wars (discussed in more depth later in this chapter).

Still, just two years before the US entered World War II, there was an appalling lack of transport planes in the Air Corps. In June 1939 the Air Corps had 2,181 planes on hand but only 75 were transports, 41 of which were assigned to the 50th Transport Wing. Meanwhile, of the 1,115 planes on order, only 21 were transports. As Dr Brown concluded, "with such a scarcity it was evident that in the event of a national emergency the Air Corps must depend on commercial aviation not only for the progressive development of this [transport] type of craft but also for the airplanes themselves in production quantities."[57] Despite the anticipated delivery of the 11 new C-45s, the overall lack of sufficient numbers of staff support aircraft certainly supports her claim.

With war looming, the US military began to expand. Senior staff personnel and high-ranking government officials required rapid air transportation to perform their duties at numerous geographically dispersed sites. In 1940 the Air Corps's many commands, training centers, as well as its four air districts flew these administrative support missions with B-18A bombers because there just were not enough transports around to give one to each command. Many users were required to get transportation support from a pool of transport aircraft at Bolling Field, Washington, D.C.[58] By the time the Japanese attacked Pearl Harbor, the chronic shortage of staff support aircraft was no better. The lack of proper planning and acquisition would require desperate short term measures while awaiting production of new staff and executive transports.

World War II

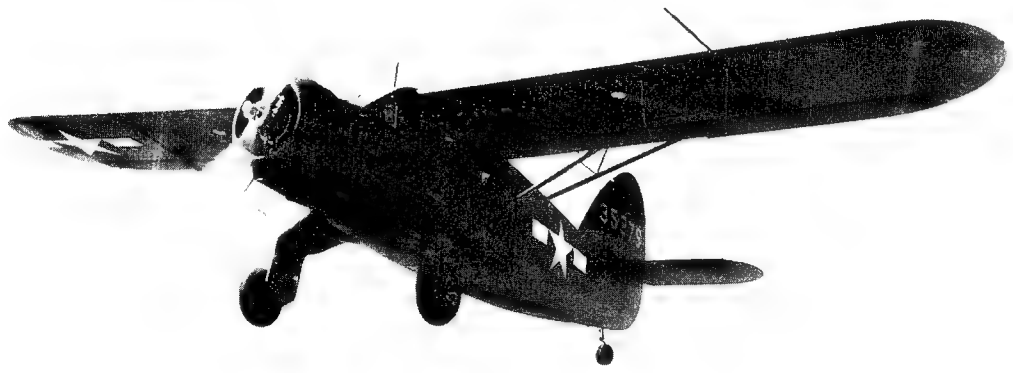
The first six months of World War II saw mushrooming requirements for small, short-range transport aircraft in all theaters. Commanders needed such planes for staff and courier support, hauling small supply items and critical spare parts, and carrying wounded. Unfortunately, there were very few such transports in military service so the Army Air Forces turned to civilian owners (often small air transport companies) and purchased their privately owned commercial airplanes. AAF acquired quite a few aircraft in this way, including three Piper UC-38s, 15 UC-36As (Lockheed Electra Model 10s), 20 Howard UC-70s, 16 Spartan UC-71s, 42 Waco UC-72s, and 50 Stinson UC-81s.[59] Most of these planes had a useful payload of under 2,500 pounds. So beginning in the summer of 1942, the AAF added the prefix "U" for "utility" to designate these light aircraft.[60] Little information is available about this hodgepodge of utility planes and most were replaced as soon as better and larger staff transport aircraft became available. In fact, six other light transport aircraft were destined to perform the majority of staff support transportation during the war.

The Beechcraft UC-43 Traveler

The US entry into World War II brought an urgent need for a small staff support and communications transport airplane. To meet its immediate needs the Army Air Forces impressed a considerable number of Beechcraft Model 17s into service with the UC-43 designation.[61] However, not enough civilian Beech 17s were available so the AAF placed an order for 27 more Model 17s (later version) in late 1941.[62] These single-engine, stagger-wing biplanes carried one pilot and three passengers. Flight performance characteristics included a maximum speed of 198 mph, a ceiling of 20,000 feet, and a range of 500 miles. They served primarily in the CONUS, but a limited number of AAF UC-43s saw action in Europe in 1944.[63]

The Fairchild UC-61 Forwarder

Derivatives of the Fairchild Model 24 commercial aircraft, the UC-61 was a single-engine, high-wing monoplane used for light communications (meaning commander, staff, and courier support).[64] Equipped with four seats (front two with controls), the Forwarder had a maximum speed of 110 mph, a ceiling of 11,400 feet, and a range of 555 miles.[65] As with the UC-43, a number of civilian Model 24s were impressed into Army Air Forces service as UC-61Bs through UC-61Js. However, the AAF purchased 815 A and K model UC-61s from 1942 through 1944.[66]

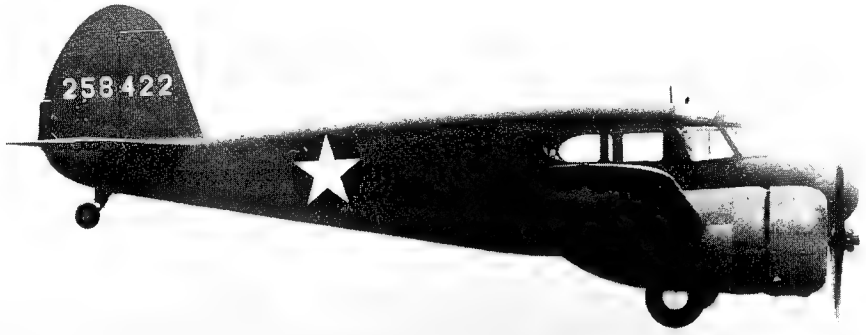


The Fairchild UC-61 Forwarder

The Cessna UC-78 Bobcat

Another staff support aircraft produced in large quantities during World War II was the UC-78. In 1939, 33 Cessna commercial Model T-50s were ordered as trainers (AT-8s) for the AAF and Canada with procurement beginning in 1940. On war's eve, the AAF placed the first of several AT-17s (AT-8s with different engines). Of more than 1,200 AT-17s built, over 500 went to

Canada.[67] Recognizing the possibilities of the T-50/AT-17 as a staff support airplane and because Cessna could produce 375 transports in existing facilities by year's end, the Army Air Forces chose this plane as a light personnel transport.[68] Carrying a pilot and four passengers, the twin-engine UC-78 had maximum and cruise airspeeds of 195 mph and 175 mph respectively, a ceiling of 22,000 feet, and a range of 750 miles.[69] Unfortunately, the Bobcat was plagued by a number of design problems, including poor quality wooden propellers on the UC-78 B and C models and a wing leading edge problem on all models that, according to Dr Brown, caused innumerable crashes. For these and facility allocation reasons, Bobcat production terminated early with the last plane delivered in March 1944.[70] Still, with the A, B, and C models, Cessna eventually built more than 3,000 UC-78s for both the AAF and the US Navy, and some Bobcats served up to 1949.[71]



The Cessna UC-78 Bobcat

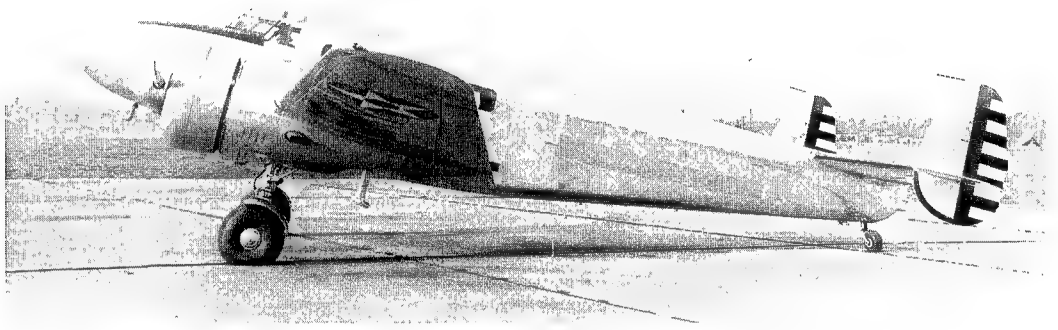
The Noorduyn C-64 Norseman

Before the war began Noorduyn Aviation Limited of Montreal, Canada, designed a rugged float and ski freighter for use in the Canadian Arctic and lakes regions. The AAF adopted the Norseman in 1942 following trials with seven YC-64s and eventually used the ski and wheel equipped C-64s in the Arctic, along the Alaskan road project, and the northeast and northwest ferry routes. Substantially larger than the UC-43, UC-61, and UC-78, the single-engine, high-wing monoplane UC-64 had a maximum speed of 162 mph and could carry six passengers or four litter patients.[72] The only Canadian aircraft produced throughout World War II, the AAF ordered 746 C-64As during the war.[73]

The Lockheed C-56/C-57/C-60 Loadstar

Although much larger than all four staff transports mentioned above, the Lockheed Loadstar was, to some extent, used in a staff support role. The C-56s and C-57s were civilian commercial aircraft derived from the Lockheed Model 18 and impressed into military service after the outbreak of World War

II. In an obvious OSA-type role, 25 C-56s (in six versions) were requisitioned and "fitted up with interior fittings of executive type, including tables and facilities for administrative use."[74] Meanwhile, 20 other Loadstars were christened C-57s and fitted with 14 standard chairs for the transport of personnel.[75] The C-60 Loadstar was also derived from the Model 18 but was designed and procured specifically for the military. The AAF bought 21 basic model C-60s, but the more notable version, especially from an OSA standpoint, was the C-60A. Fitted with seven passenger seats in an executive version, the AAF bought 325 C-60As beginning in 1942.[76] Although performance varied somewhat by model and version, the twin-engine, twin-tail Loadstars generally had a maximum speed of 253 mph, a ceiling of 23,300 feet, and a range of 1,600 miles.[77]

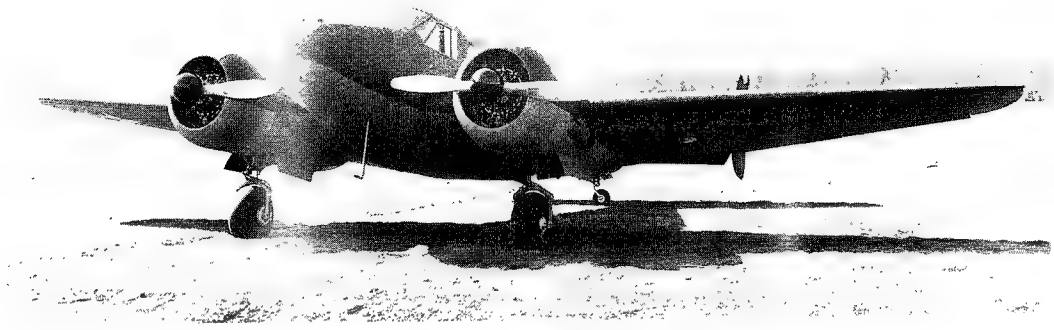


The Lockheed C-60 Loadstar

The Beechcraft C-45 Expeditor

By far the most successful and prolific transport aircraft built for staff support was Beech's twin-engine, twin-tail C-45. As mentioned earlier in this chapter, the C-45 was derived from the popular Beech Model 18S light commercial transport.[78] In addition to the 11 six-passenger, basic model C-45s received in 1940, the Army Air Force acquired 20 C-45As in 1941 and 23 C-45Bs in early 1942, both eight passenger models, initially nicknamed Voyagers. Also in 1942, two commercial Model 18S airplanes were impressed into the AAF as UC-45Cs, and eight AT-7s were converted into UC-45Ds (two) and UC-45E (six).[79]

Unfortunately, further production of new C-45s suffered because the reliability and versatility of the Model 18S caused the trainer versions (AT-7s and AT-11s) to receive production priority over the C-45. In fact, on 25 June 1942, the AAF decided that the 100 UC-45s then on contract should be converted to AT-7s. Despite numerous requests for more C-45s, it was not until April 1943 that the Committee on Standardization of Transports suggested renewing C-45 production with a rate of 75 per month. With AT-7 and AT-11



The Beechcraft C-45 Expeditor

production scheduled for termination in 1943 and 1944 respectively, Brig Gen K. B. Wolfe, chief of Production Division at Wright Field, agreed that same month to turn on C-45 production at Beech. The first three C-45Fs (now nicknamed the Expeditor and equipped with seven passenger seats) were accepted in October 1943 with the last 66 C-45s delivered in August 1945. In slightly less than two years of feverish production, Beech built more than 1,700 C-45s, placing the Expeditor second only to the UC-78 Bobcat as the most heavily produced staff support transport.[80]

Although slight variation occurred between models, the C-45's average flight characteristics included a maximum speed of 215 mph, a ceiling of 20,000 feet, and a range of 700 miles.[81] The Expeditor's useful load capacity of approximately 1,500 pounds varied depending on fuel load and range desired.[82]

With the best combination of speed, comfort and reliability of all the staff support and communications aircraft built during World War II, C-45s were in high demand throughout the AAF's worldwide area of operations. However, owing to their relatively late production, most of the C-45s remained in the CONUS during the war. Still, several hundred did reach the war zones, especially in Europe where the plane's somewhat limited range (700 miles) was not a big factor. This outstanding aircraft's usefulness did not diminish with the war's end. The C-45 would continue to serve the AAF and Air Force through the rest of the 1940s, during the Korean War, and well into the late 1950s. All in all, the C-45 performed superbly throughout the world and truly lived up to its nickname Expeditor.

Costs and Production

Table 1 shows the high and low costs of the six staff planes along with typical figures for a few bombers and fighters as well as the two large, well-known cargo aircraft of World War II.[83] Obviously, the six staff support aircraft were relatively inexpensive, especially compared to the larger transports and combat aircraft.

Table 1

Average Unit Cost of Airplanes by Principal Model ($)

Aircraft	High Cost	Year	Low Cost	Year
C-43	49,524	1942	27,332	1944
C-45	67,743	1941	48,830	1945
C-60	126,881	1942	113,168	1943
C-61	15,973	1945	12,208	1942
C-64	36,881	1943	32,427	1945
C-78	33,797	1943	27,470	1942
C-47	128,761	1941	85,035	1945
C-54	516,553	1941	259,816	1945
B-29	893,730	1942	509,465	1945
B-25	180,031	1941	116,752	1945
P-47	113,246	1941	83,001	1945
P-51	58,824	1943	50,985	1945

Source: Headquarters Army Air Forces, *Army Air Forces Statistical Digest (AAFSD): World War II* (Washington, D.C.: Office of Statistical Control, December 1945), 134.

Table 2 shows the total aircraft and total transport aircraft factory deliveries for the AAF from July 1940 through August 1945. Also listed are the total factory acceptances for the six staff support aircraft as well as the totals for all six from January 1940 through August 1945.[84]

Table 2

Factory Deliveries/Acceptances

Year	Total Aircraft	Total Transports	Total Staff Transports[a]	C-43	C-45	C-60[b]	C-61	C-64	C-78
1940[c]	1,209	5	82	7	19	45	11	0	0
1941	8,723	133	196	0	41	98	51	6	0
1942	26,488	1,264	542	27	0	180	147	1	187
1943	45,889	5,072	3,671	157	60	297	400	209	2,548
1944	51,547	6,430	2,546	161	1,060	0	400	454	471
1945[d]	25,064	2,865	73	0	591	0	0	82	0
Totals:	158,880	15,769	7,090	352	1,771	620	1,009	752	3,206

[a] Total of all six staff support aircraft.
[b] Includes all Loadstars (C-56, C-57, C-59, C-60).
[c] July-December only for total aircraft and total transports columns.
[d] January-August 1945 all columns.

Source: Headquarters Army Air Forces, *Army Air Forces Statistical Digest (AAFSD): World War II* (Washington, D.C.: Office of Statistical Control, December 1945), 118, 127.

The numbers may appear somewhat misleading, especially between total transports and total staff transports. The discrepancy comes from how the AAF tabulated the data and defined deliveries and acceptances in the *Army Air Forces Statistical Digest (AAFSD)*. Basically, deliveries include all planes earmarked for the AAF while acceptances mean all planes receipt for legal title accepted by the Army factory representatives, even if for other users (including foreign countries).[85] A number of staff support transports went to users other than the Army Air Forces, but no figures are available to show exactly how many fall into that category. However, quite a few of the early Loadstars were given to other countries, principally Great Britain under Lend-Lease.[86] Additionally, some staff planes, particularly the UC-43s and UC-78s, were probably operated directly by Army headquarters and field units so their total would not show up in the total AAF deliveries but would appear under the individual aircraft acceptances.

One of the interesting points about the figures in table 2 is the large percentage of all transports produced during the war that are represented by these six small staff transports. Even discounting the small numbers sent to other users, a huge percentage of AAF transports were staff support aircraft. After a slow start, staff support aircraft production peaked in 1943, accounting for more than 70 percent of all transports built that year. Perhaps even more amazing, over the entire war these six planes numbered over one-half of all transport aircraft acquired by the AAF. Not shown—no C-45s and only four more C-64s were built after the war's end in August 1945.

Another perspective is presented in table 3 which shows the airplanes on hand in the AAF from 1939 through 1945. All yearly figures are for December numbers except for 1945 which shows the August (end of war) and December levels. Individual figures for each staff aircraft are not reported in the *AAFSD*, nor is the term "light transports" explicitly defined. However, based on other tabular information on the same pages, light transports certainly include all six staff support aircraft and perhaps a very few other miscellaneous small transports. It definitely excludes all miscellaneous "medium and heavy" transports as well as all the C-46s, C-47s, C-54s, and C-87s.

As in the delivery figures of table 2, table 3 also indicates light transports were a very high percentage of total transports throughout the war. Indeed, at the beginning of the war in December 1941, staff support planes accounted for nearly 50 percent of all transports on hand in the AAF. By the end of 1943, the percentage actually exceeded 50 percent. The numbers drop off rather dramatically by 1945, but this was mostly due to the retirement of many UC-78s and their replacement with the newer C-45s.

Although not shown in table 3, a peak occurred in August 1944 when the AAF had 4,086 light transports in its inventory. The CONUS peak was 3,265 also in August 1944, while the highest overseas level was 877, reached just a few months later in November 1944.[87]

The CONUS and overseas columns clearly show that most staff support aircraft remained in the US during most of the war. In the US, staff support planes were assigned to all levels of command, and nearly every AAF field

Table 3

Airplanes on Hand in the Army Air Forces

	Total	Total	Total	CONUS		Overseas	
Year	Aircraft	Transports	Light Trans	Trans	Light	Trans	Light
1939	2,546	131	NR	NR	NR	NR	NR
1940	3,961	124	NR	NR	NR	NR	NR
1941	12,297	254	111	210	85	44	26
1942	33,304	1,857	557	1,344	502	513	55
1943	64,232	6,466	3,332	4,183	2,889	2,283	443
1944	72,726	10,456	3,306	4,560	2,456	5,896	850
Aug 1945	63,715	9,561	1,508	3,932	728	5,629	780
Dec 1945	44,782	7,500	1,244	3,094	572	4,406	672

Legend:
NR—Not Reported

Source: Headquarters Army Air Forces, *Army Air Forces Statistical Digest (AAFSD): World War II* (Washington, D.C.: Office of Statistical Control, December 1945); and *AAFSD - 1946.*

maintained a small number for general base support and staff proficiency flying. August 1945 was the only month of the war where light transports serving overseas exceeded those stationed in the CONUS. No explanation for this disparity is found in the literature. However, the small transport's limited range and payload somewhat limited their usefulness in the combat theaters. Also, none of the six primary staff support aircraft were very well suited for unimproved airfield operations, thus again limiting their value to theater commanders and their staffs. However, many staff aircraft did see action overseas in the combat theaters and some were even lost to enemy action.

Considering these numbers, it is surprising that little if any mention of these important staff support transports is made in the World War II histories. Yet, without glamour or fanfare, they consistently and ably performed their mission of command and staff support, courier and message transport, critical supply and spare parts delivery, and transport of the sick and wounded, often on short notice. Today's OSA owes a great debt to the heritage earned by the staff support aircraft of World War II.

Between Wars: 1945 to 1950

The five years following the end of World War II was a major transition period for the Army Air Forces with its rapid downsizing and 1947 transition into the US Air Force (USAF). Total aircraft on hand decreased from 44,782 in December 1945 to just 17,063 in June 1950 (of which only 9,489 were actively flying).[88] The staff support aircraft inventory dwindled from six down

to one: the C-45. By the end of December 1946, the AAF operated only 774 of the 1,771 C-45s produced during World War II. Just three and one-half years later, the US entered the Korean War with just 453 active C-45s and no other small staff support aircraft.[89] Oddly, even with the big decreases in numbers of airplanes, the flying time remained rather constant. Total AAF/USAF flying time between January 1946 (when first reported in the *AAFSD*) and June 1950 (when the USAF switched from calendar year to fiscal year reporting), averaged close to 3,500,000 hours. Meanwhile, C-45 time also stayed steady at about the 230,000 hours per year level.[90]

C-45s were assigned to nearly all Air Force (AF) commands between wars, continuing the command and staff support mission as well as assuming a new role. A large number of pilots were now flying desks so, to keep them reasonably proficient, many desk jockeys flew any of a large variety of planes left over from World War II. C-45s were still relatively plentiful but considered second line aircraft so they were a good choice for this proficiency flying which was known as minimum individual training (MIT).[91] AAF Letter 150-10, *Planning Factors for Airplane Allocations and Combat Crews* (17 December 1945), authorized every air base with an emergency rescue flight to own one C-45 per flight. These rescue flights normally fell under the command of the host air base wing so base commanders and staffs had readily available transportation. Remaining C-45s were applied against requisitions from AAF agencies to supply Table of Organization and Equipment (TOE) authorizations.[92] Basically, this meant a unit could use C-45s to bring its total number of aircraft up to its authorized numbers. For example, an F-86 squadron might be short a fighter so it could request a C-45 instead of another F-86. Such a practice allowed units, especially those with small planes like fighter squadrons, a small transport for staff support, flying proficiency, and cross-country trips. As a result of these provisions in AAF Letter 150-10, C-45s were found at nearly every air base in the Air Force.

The year 1948 is a good example of C-45 use by the various USAF commands (unfortunately, the *AAFSD* did not give similar individual command figures for 1949 or 1950). On 31 December 1948, the USAF had a total of 591 C-45s in the inventory with 399 stationed in the US and 192 overseas. Flying time for the entire year was 298,278 hours, of which less than 25,000 hours were flown overseas. The major using commands (with number aircraft/hours) were Air University (AU) (117/51,585), Continental Air Command (77/39,656), Air Materiel Command (75/31,977), Headquarters Command (63/45,959), Military Air Transport Service (MATS) (26/16,586), Pacific Command (PACOM)/Far East Air Forces (FEAF) (25/12,990), and US Air Forces in Europe (USAFE) (127/5,149).[93]

It may seem odd that Air University was the biggest user of C-45s, but AU had a large number of students who needed flying while in school as well as a lot of staff instructors who also needed to maintain flying proficiency. The highest ratio of flying time per aircraft belongs to Headquarters Command out of Bolling AFB. No doubt there was a lot of proficiency flying necessary to keep Pentagon personnel current, but the C-45s also did plenty of actual staff

support missions as well, ferrying groups all over the US. One other interesting note is that neither the Air Force Reserve nor the Air National Guard had C-45s assigned during this period.

The USAFE and general overseas aircraft versus flying time imbalance is probably due to the Berlin Airlift operations. Pilots and large aircraft were needed to support Operation Vittles so most USAFE C-45s sat idle during the airlift after completing nearly 24,000 hours in 1947. After the airlift, USAFE apparently eliminated its C-45 inventory since they flew only 117 hours from January through June 1949 and zero time from July 1949 through June 1950 (fiscal year 1950).[94]

On the eve of the Korean War, C-45s were spread out all over the Air Force and were used mostly by part-time staff pilots maintaining their flying proficiency (MIT time). Whomever owned the aircraft exercised command and control. No centralized control existed to get the best airlift support and efficiency from these small planes. Things would not get any better in Korea.

The Korean War: Airlifters without Airlift Control

When the North Koreans crossed the border into South Korea early in the morning of 25 June 1950, no US forces were stationed in Korea. Far East Air Forces aircraft sat at their bases from the Philippines to Okinawa and mainland Japan. Of the 453 C-45s actively flying in the Air Force, FEAF owned 27. These 27 aircraft mostly belonged to air base wings to support the base and headquarters staff personnel achieve their MIT time and, as a by-product, provide staff support airlift.[95] Although the C-45s pilots flew a lot of sorties and flying hours during the next three years carrying personnel and cargo throughout Japan and Korea, these planes never really became part of the airlift system supporting the war. Lack of centralized control is an issue that would surface again in future conflicts, including the Persian Gulf War.

Just before the war, the 374th Troop Carrier Wing (TCW) under Fifth Air Force (5AF) was responsible for FEAF's air transportation system.[96] On 25 June 1950, news of hostilities brought a quick change. *The History of Fifth Air Force: 25 June 1950-31 October 1950* states "all cargo type aircraft possessed by FEAF in Japan were placed under the operational control of Headquarters, 5AF."[97] Unfortunately, the immense airlift requirements quickly overwhelmed the 5AF staff so, in August 1950, it established a Troop Carrier Division to run intertheater airlift operations. However, the Troop Carrier Division lasted only a month before a 5AF reorganization changed command relationships again. On 10 September 1950, FEAF created the Combat Cargo Command (COCARCOM), under the command of famed Berlin Airlift head Maj Gen William H. Tunner, with responsibility for all intratheater airlift. COCARCOM gained "all 5th Air Force cargo aircraft [and was] operationally responsible directly to Headquarters FEAF" but fell under Headquarters 5AF for administrative and logistics purposes.[98]

Despite the claims that all cargo planes came under COCARCOM few, if any, C-45s transferred to the new command. Synopses of COCARCOM data never mention the C-45. In addition, available literature makes no direct references to operational control of the C-45s. Nor is there any evidence that FEAF or 5AF tasked those C-45s not under their direct command.

On the contrary, information suggests the C-45s remained assigned to their prewar units (usually air base wings and headquarters' flights), probably under the unit's operational control, and continued their role as MIT aircraft. The 5AF director of operations (DO) *Summary of Historical Events: 25 June through 15 September 1950* states that under Project #50-18-4, *MIT A/C (C-45) Requirements*, 21 C-45s in-theater were actively used for MIT purposes and assigned as follows: Fifth AF, 5; Thirteenth AF, 5; Twentieth AF, 4; Far East Air Material Command (FEAMCOM), 4; FEAF bases, 2; plus 1 in depot maintenance).[99] Therefore, it is doubtful that the C-45s were integrated into COCARCOM or any centralized airlift system.

On the other hand, a few FEAF C-45s were also used as administrative aircraft. The most current Air Force Letter (AFL) 150-10, *Program and Manpower: Peacetime Planning Factors*, dated 13 September 1950, defined administrative aircraft as:

> Aircraft provided to certain headquarters organizations and other Air Force activities for the accomplishment of such missions as staff administration, courier service, emergency maintenance, and emergency delivery of supplies and equipment.[100]

AFL 150-10 also authorized FEAF to have 17 bombers or transports—four two-engine planes and 13 four-engine aircraft—as administrative aircraft. Of the four two-engine planes, one was authorized for a numbered air force (NAF) headquarters (unknown as to which NAF) and one to each of the three fighter wing headquarters.[101] Comparing the total number of C-45s assigned to FEAF on 30 September 1950 (25) with the numbers used for MIT as of 25 September 1950 (21), it seems the four two-engine administrative airlift planes in FEAF were all C-45s.[102] In addition, FEAF also had a handful of VC-47, VC-54, C-121, and VB-17 aircraft assigned to the administrative airlift role by the end of September 1950. However, these planes were often used strictly for DV missions to include support for the commanding general, US Army Korea; the FEAF and 5AF commanders; and the US ambassador to Korea, the Honorable J. J. Muccio.[103]

On 1 July 1950, the Air Force waived the annual MIT flying requirements, at least for FEAF pilots and probably Air Force-wide.[104] So, the FEAF C-45s were probably used for a variety of support functions besides MIT training. No matter how the C-45s were assigned, commanded, and operationally controlled, the large number of sorties and hours flown during the three years of war indicates these small planes did perform a great deal of staff, troop, and light cargo support missions although perhaps as a by-product of available MIT flying. Table 4 shows the number of C-45s assigned to FEAF during the war (as of 30 June each year) and their yearly flying time. *US Air Force Statistical Digest:*

1953 (USAFSD-53) defined operational flying hours as all hours flown on combat missions or on missions in support of combat operations.[105]

Table 4

Far East Air Forces C-45 Aircraft and Flying Hours

Year	C-45s Assigned	C-45 Flying Hours		
		Total	Operational	Nonoperational
1950	27	NR	NR	NR
1951	22	10,131	945	9,186
1952	22	9,686	96	9,590
1953	22	13,839	841	12,998
Totals:	—	33,656	1,882	31,774

Legend:
NR—Not Reported (hours from 25–30 June 1950 reported with FY 1951 totals)

Source: *USAF Statistical Digests: FYs1951, 1952,* and *1953* (all flying hours).

Certainly some C-45s took part in combat support operations. In the first 37 days of the war, C-45s flew 23 operational sorties totaling 159 hours. By the end of the war's first year, C-45 had flown more than 1,200 operational sorties and nearly 1,000 hours directly supporting the war effort.[106] Most help came from the MIT aircraft belonging to the headquarters and bases in FEAF. However, some help came from the combat flying units themselves. For September 1950, *USAFSD-51* lists three C-45s as aircraft in committed units possessed and combat ready as well as eight crews in committed units available and combat ready.[107] The planes, probably the administrative aircraft assigned to the three fighter wings (8th, 18th, and 49th Fighter-Bomb Wings), quickly committed to the war and moved into Korea.

Since the C-45s were unarmed and slow, they probably did not get too close to the front lines. During the entire war, just one C-45 was lost on an operational mission. In December 1950, that C-45, probably one of the fighter wing's combat ready administrative C-45s, was destroyed although not by direct enemy action.[108] In addition, 14 FEAF C-45s experienced major accidents during the war with four aircraft destroyed and three fatalities.[109] Considering all the flying time and sorties, these low loss-numbers signify a safe, professional crew force and a very reliable aircraft.

Although no readily available account details the C-45's experiences and exploits during the Korean War, these small planes and their mostly part-time crews accounted themselves well. Flying an average of 10,000 hours each year, the FEAF C-45s played a small but significant part in the war by providing time-critical movement for commanders and staffs, transporting wounded and couriers, and hauling light cargo and critical spare parts. Despite the lack of centralized, coordinated command and control, the C-45s set a precedent for OSA's combat support mission which carried on into the Vietnam conflict.

Transition to the Jet Age: 1951 to 1974

The years between the Korean War and the war in Vietnam were very eventful for the staff support mission. The Air Force added a variety of new light transports to its inventory but some were peripheral to the staff support mission.

Miscellaneous Light Transports

Several small transports, such as the L-20/U-3 De Havilland Beaver, were primarily tactical liaison planes but were also used for staff support transportation when necessary. The seven-passenger, single-engine L-20/U-3's slow speed, low altitude, and short range made it ideal for short-haul liaison work or pilot proficiency but unsuitable for regular staff support work.

In 1955 the Air Force acquired 15 Aero Design L-26B Commanders (commercial model 560As) as staff transports as well as two L-26Cs allocated for presidential use.[110] Redesignated as U-4As and Bs in 1960, these few high-wing, twin-engine, propeller-driven planes mostly served as command mission support (CMS) aircraft, first for Headquarters Command and, beginning in fiscal year (FY) 1962, for Air University.[111] Ten U-4s continued as CMS and utility transportation aircraft up through the end of FY 1967. With their retirement, the U-4s completed their useful, if limited, career as OSA-type staff support aircraft. However, the four remaining U-4s served as tactical and combat support aircraft in 1968. That number dropped to two aircraft (both B models) in 1969 and both finally retired at the close of FY 1977.[112]

In 1956 the Air Force invited industry-financed prototypes for its first utility transport jet aircraft. In October 1959 the Air Force announced the selection of Lockheed's model 1329 Jetstar with the AF designation C-140.[113] Altogether, the Air Force bought 16 C-140s but the first five (C-140As) went to navigation/facilities maintenance (often referred to as flight check) duties with the Air Force Communications Service. Six C-140Bs (13 passengers) personnel transports along with five VC-140Bs (eight passengers) VIP transports soon followed although the five C models were later reconfigured into the VC version. However, instead of becoming staff support aircraft, the 11 C/VC-140Bs normally transported only senior military officers and government officials, including the president. By 1982 the 89th Military Airlift Group at Andrews AFB, Maryland, owned six VC-140Bs while five served in Europe with the 58th Military Airlift Squadron at Ramstein Air Base, Germany.[114] Thus, the C/VC-140 never served to any great extent in the typical OSA-type role.

Although the L-20/U-3, U-4, and C/VC-140 aircraft were used to limited degrees as OSA-type transports, the Air Force also added two new primary staff support aircraft to the inventory in the late 1950s and early 1960s. In 1957 the propeller-driven L-27, redesignated the U-3 in 1959, joined the inventory. A few years later in 1961, the staff support mission truly entered the jet age with delivery of the first T-39. However, for the remainder of the 1950s, the venerable C-45 continued its outstanding work with a new lease on life.

The C-45: Rejuvenation and Retirement

By 1951 the Air Force had retired all C-45A through D models from the inventory. More than 450 F models were still serving throughout the world but were nearing the end of their useful life. Meanwhile, the Air Force needed a small aircraft to continue the staff support mission. With the war in Korea costing the Air Force millions of dollars and requiring US aircraft production to concentrate on combat aircraft, the AF turned to a rejuvenation program designed to extend the life of existing C-45s, T-7s, T-11s, and RC-45s. Remanufactured and refurbished by Beech and given new engines, serial numbers, and model designations, the tired old C-45Fs and others became modern, six-passenger C-45Gs and C-45Hs.[115] The Air Force accepted the first six new C-45Gs in March 1952 with production of 57 in FY 1952, 295 in FY 1953, and the final 20 in July 1953 (FY 1954). Meanwhile, the first six C-45Hs left Beech in July 1953. Overall, H model production was 292 in FY 1954 and 140 in FY 1955 with the last 12 accepted in March 1955 for a total of 432 C-45Hs.[116]

Table 5 shows the number of Air Force aircraft (excluding the reserve components [RC]—AF Reserve [AFR] and Air National Guard [ANG]) and flying time for the Air Force and the three major flying activities that included the staff support mission. Figures for the three support activities include only operating active aircraft and flying time.

All aircraft figures are as of 30 June each year. Flying times listed for 1950 are for the 18-month period from 1 January 1949 through 30 June 1950 (change of fiscal years).

Table 5

Army Air Forces /United States Air Force
Fly Aircraft on Hand and Flying Time

	Total		Operating Active[a]		MIT/OS[b]		Special Mission		Admin	
Year	# A/C	Fly Time	# A/C	Fly Time	# A/C	Fly Time	# A/C	Fly Time	# A/C	Fly Time
1950	17,063	5,686,102	9,489	5,645,186	1,964	NR	336	NR	228	NR
1951	18,820	5,215,763	12,850	5,182,763	2,096	1,206,118	447	197,494	337	164,214
1952	19,800	7,104,915	15,292	7,061,631	2,083	1,339,881	550	262, 339	74	94,305
1953	21,363	8,174,496	17,108	8,114,226	1,955	1,271,358	684	314, 946	67	42,050
1954	23,465	8,104,296	18,743	8,039,017	1,933	989,175	812	331,677	80	42,140
1955	25,088	8,940,009	20,042	8,873,040	2,237	1,284,750	942	441,609	93	48,284
1956	24,572	8,996,324	18,823	8,914,684	2,164	1,358,805	1,074	464,077	92	61,078
1957	23,412	8,501,548	18,126	8,397,226	2,208	1,253,493	987	452,351	98	66,465
1958	21,367	7,809,238	16,085	7,768,019	2,216	1,377,112	1,035	463,063	100	73,002

[a] Operating active known as flying active before 1956.
[b] Minimum individual training (MIT) changed to operational support (OS) in 1954.

Legend:
NR—Not Reported in *USAFSDs*

Source: *USAF Statistical Digests: FY 1949/1950* through *FY 1958.*

During the early 1950s the Air Force altered the definitions of the flying activity categories as well as the number of aircraft supporting each activity. In 1954 MIT became operational support (OS) and added a new mission. *USAFSD-54* defined operational support as aircraft assigned for essential liaison and logistical support not otherwise provided for as well as for the required combat readiness training of rated personnel not presently assigned to tactical units or crew positions. The administrative category was now simply aircraft assigned major air commands for the performance of command administrative missions—a rather benign definition.[117] Thus, that portion of small staff support aircraft maintained under the 1950 definition of administrative aircraft now became part of operational support. By 1954 the term administrative generally meant medium-to-large, cargo-type aircraft used by MAJCOM commanders and used for general DV and command team travel (inspector general [IG], etc.). Administrative flying did not include such small staff support planes as the C-45. Table 5 shows this terminology change as the sharp decrease in administrative aircraft and flying hours between 1950 and 1954.

The special mission (SM) category did not change its strict definition between 1950 and 1954. Both AFL 150-10 (13 September 1950) and *USAFSD-54* defined special mission as aircraft assigned to special units and activities of the Air Force for the accomplishment of special missions.[118] In 1956 the Air Force altered the special mission definition to "aircraft assigned to major air commands to accomplish missions of the Air Force in support of its own special activities and those governmental agencies which cannot be met as a by-product mission of other flying."[119] Both definitions are vague but special mission was really a catchall term for leftover missions—unique missions usually involving just a few planes that fell under no other flying activity category. In 1950 two-engine transports constituted the vast majority of special mission aircraft supporting such varied organizations as the Air Training Command (ATC) Demonstration Team, MATS Flight Service, FEAF Mapping Detachment, and the Armed Forces Staff College. However, by far the major users of two-engine special mission transports were the special air mission (SAM) units under Headquarters Command and US Air Forces in Europe.[120] These SAM units specialized in DV and staff support missions and were probably the forerunners of today's 89th Airlift Wing at Andrews AFB, Washington, D.C., and 58th Airlift Squadron at Ramstein AB, Germany. In addition to the two SAM units, many two-engine transport special mission aircraft were assigned around the world to such organizations as the Air Attache System and the various US military missions and advisory groups.[121]

Although special mission's definition did not change until 1956, the interpretation altered by 1954. Table 5 showed that from 1951 to 1954 as the number of administrative aircraft dwindled by more than 250, special mission aircraft increased by more than 350. Special missions likely acquired most, if not all, of the administrative losses. Some of the MIT/OS losses were probably picked up in the special mission category as well.

The bottom line of these definition and interpretation changes is that, by the mid-1950s, small aircraft staff used as support airlift were totally removed from the administrative category. By 1956 the *USAFSD*s listed only 92 aircraft as administrative. Of those 92 planes, 90 were cargo type including 66 C-54s, 12 C-131s, five VB-17s, three VT-29s, two C-118s, and one each C-97 and C-121.[122] All these planes could carry 30 or more passengers and were used for DV and large team travel, not small staff support.

Instead, the special mission and operational support activities contained the staff support mission. The distribution of C-45s in 1956 (the first year such figures were published in the *USAFSD*) backs up this assertion. Table 6 shows that of the 600 active C-45s in the Air Force (not including AFR and ANG) on 31 December 1956, 514 were operational support and 80 were special mission. No C-45s were in the administrative category.[123] Over their remaining years in the inventory, nearly all USAF C-45s remained in the OS and SM categories with no administrative planes.

Table 6 shows the C-45s on hand and flying hours (when available) from 1946 through 1962. Unfortunately, no World War II figures were published in

Table 6

C-45 Aircraft and Flying Hours

	Total		Operating Active		MIT/OS[a]		Special Mission		RC
Year	# A/C	Fly Time	# A/C	Fly Time	C-45s	Tot AF	C-45s	Tot AF	C-45s
1946	774	235,882	NR	NR	NR	NR	NA	NA	NR
1947	683	226,450	NR	NR	NR	NR	NA	NA	NR
1948	591	229,173	NR	NR	NR	NR	NA	NA	NR
1949	470	b	446	b	NR	2,227	NA	NA	NR
1950[c]	473	317,747	453	316,417	NR	1,964	NR	336	1
1951	418	202,659	397	201,915	NR	2,096	NR	447	0
1952	422	231,000	416	230,082	NR	1,955	NR	550	0
1953	633	264,711	614	264,391	NR	2,083	NR	684	0
1954	815	285,229	726	285,042	NR	1,933	NR	812	45
1955	774	349,949	725	349,760	NR	2,237	NR	942	120
1956	663	337,248	600	337,057	514	2,164	80	1,074	114
1957	668	289,679	588	289,501	494	2,208	90	987	112
1958	600	NR	530	280,833	432	2,216	90	1,035	77
1959	337	NR	151	202,952	58	1,518	66	1,340	68
1960	283	NR	19	45,189	1	1,409	18	1,430	34
1961	39	NR	1	263	0	986	1	1,320	0
1962	13	NR	1	133	0	612	1	1,205	0

a MIT changed to OS in 1956.
b Flying time included in 1950 totals (1 January 1949 through 30 June 1950).
c Aircraft numbers 1946–1949 as of 31 December; 1950–1962 as of 30 June.

Legend:
NR—Not Reported
NA—Not Available

Source: *USAF Statistical Digests: FY 1946* through *FY 1962.*

the *AAF Statistical Digest: World War II* nor were flying activity breakdowns contained in the *AAFSD*s or *USAFSD*s before 1956. Additionally, special mission did not become a flying activity category until 1950, therefore aircraft numbers before 1950 are not available. Also, figures do not include AFR or ANG planes and hours. The reserve components column lists AFR/ANG C-45 aircraft and is in addition to regular AAF/USAF figures. All MIT/OS, special mission, and RC figures are for flying/operating active aircraft only.

The increases in aircraft numbers in the mid-1950s reflect the remanufacture of F models into G and H models. In 1956 C-45s made up almost one-quarter of all USAF operational support aircraft. This fact is a tribute to the C-45s versatility as both a staff transport and proficiency training plane. Additionally, the reserve components, mostly the Air National Guard, received good support from their C-45s in the mid-to-late 1950s, mostly as a staff transport.

From the initial 11 C-45s delivered in 1940 through the retirement of the last active plane in 1962, the C-45 proved invaluable to the AAF and USAF, primarily as a small, efficient staff transport and a reliable pilot proficiency aircraft. However, even as the refurbishment was extending the C-45s' life in the early 1950s, the Air Force recognized it would eventually need a faster, more modern staff transport to replace the C-45 in the late 1950s.

The Cessna U-3: Continuing the Tradition

To replace the C-45, the Air Force selected the Cessna 310 as the winner of a competition for a light twin-engined administrative liaison and cargo aircraft in early 1957.[124] On 15 February 1957, Cessna and the Air Force signed a contract for 80 Model 310s and in early 1958 added another 80 to the original order at a unit flyaway cost of $55,134. Originally designated Liaison L-27As, the Air Force reclassified these planes in 1959 as utility aircraft and redesignated them U-3As. Two years later, the Air Force acquired 35 U-3Bs, more powerful model 310Es with a swept-back tail fin. Painted with a distinctive blue and white finish and equipped with large wingtip fuel tanks, the U-3s were often referred to as Blue Canoes.[125]

Continuing an OSA tradition begun in the 1930s, these new light staff transports were purchased off-the-shelf with only minor equipment modifications to the commercial model 310s. This type of procurement action enabled extremely quick deliveries. Just three months after contract signature, the Air Force accepted the first five L-27As in May 1957. By December all 80 planes under the original buy were in the AF inventory. The first five planes of the second 80 aircraft purchased began rolling off the assembly line in May 1958 with the last 14 accepted in November 1958. The Air Force accepted the first three of its 35 U-3Bs in December 1960 with the last seven entering the inventory in June 1991.[126]

The U-3A enjoyed a maximum speed of 238 mph at sea level and a service ceiling of 19,800 feet. Range was 1,005 miles at a normal cruise speed of 181 mph at 10,000 feet. Maximum takeoff weight was 4,830 pounds.[127] Smaller

than the C-45, the U-3 carried just five people—two in front at the pilot and copilot positions and three passengers behind on a cross bench seat. A small baggage/cargo compartment behind the seats with internal and external access could carry up to 200 pounds.[128]

The U-3 also differed from the C-45 in its primary flying activity history. While C-45s began as staff support planes and evolved into proficiency aircraft under the MIT and OS categories, the U-3s began and ended their careers as staff support aircraft. Table 7 shows the numbers of Air Force L-27s/U-3s on hand by total, operating active (OA), and flying activity codes (OA only) as well as total flying time for the OA planes. All figures exclude reserve components.

Table 7

L-27/U-3 Aircraft and Flying Time

Year	Total A/C	OA A/C	SM/CMS/UT*	OS	Admin	OA Fly Time
1957	15	7	0	5	0	291
1958	94	92	18	10	0	40,912
1959	158	158	155	1	0	105,008
1960	156	156	153	1	0	117,115
1961	191	190	187	1	0	120,015
1962	186	185	182	0	0	133,525
1963	185	184	79	0	3	124,489
1964	183	179	173	0	2	116,791
1965	182	180	173	1	2	112,120
1966	185	184	178	1	0	105,327
1967	183	180	174	1	0	90,289
1968	182	162	131	26	0	84,266
1969	110	24	22	0	0	26,181
1970	32	18	14	0	0	6,821
1971	36	17	10	0	0	6,155
1972	27	7	5	0	0	3,865
1973	8	2	0	0	0	624

*Special mission (SM) changed to command mission support/utility transportation (CMS/UT) in 1959.

Source: *USAF Statistical Digests: FY 1957* through *FY 1973.*

As seen in table 7, regular (active duty) Air Force U-3s dramatically decreased in numbers in 1969. Although the AF Reserves owned two to three U-3s from 1962 through 1965, 1969 marked the year when most active duty U-3s transferred to the reserve components. In 1969 the RC operated 71 U-3s (19 AFR/52 ANG), increasing to 141 in 1970 (69/72), before dropping to 100 in 1971 (49/51) and 48 in 1972 (10/38). All RC U-3s retired before the end of FY 1973.[129]

The note at the bottom of table 7 signifies the Air Force's continuing alteration of flying activity codes and definitions. In 1959 the operational support

and administrative definitions changed slightly. Operational support became aircraft assigned to Air Force units in support of proficiency flying for those rated personnel who are not assigned to crew positions and cannot be provided their AFR 60-2 flying requirements in aircraft assigned in any other code. In other words, OS was still basically proficiency flying for staff officers in attached flying billets. Meanwhile, the administrative category became aircraft assigned to support command administrative, executive, and inspection functions. This definition differed from its immediate predecessor's only by adding the executive and inspection function. The real effect was to acknowledge administrative meant DV airlift and team travel planes (e.g., IG use).

Although OS and administrative changed in small ways in 1959, the Air Force made a major change in the category that included the OSA-type mission. The AF discarded the special mission category and replaced it with two new flying activity codes—special activity (SA) and command mission support (CMS). SA included aircraft assigned to accomplish specific special activities of the Air Force and other government activities. CMS referred to aircraft assigned to accomplish necessary unscheduled airlift of personnel and material in support of Air Force bases and units. In CMS, the Air Force finally created a code acknowledging the staff support mission. Although CMS included large as well as small aircraft, this new category was truly OSA's predecessor.[130]

Unfortunately, the Air Force also created some confusion with the CMS transition. Beginning in FY 1959, numerous references to utility transport (UT), combined with special activity, appear in the material sections of the *USAF Statistical Digests.* Meanwhile, the flight operations sections of the *USAFSD*s used CMS.[131] In reality, UT and CMS are the same categories. In 1964 the flight operations section finally replaced CMS with UT but the dual use was not officially defined until the *USAFSD*'s FY 1965 edition when the SA and CMS categories appeared under the heading special activity and utility transport.[132] The *USAFSD* definitions of administrative, OS, CMS, SA, and UT did not change through the final edition, published for FY 1980.[133] However, the Air Force interpreted these categories much differently in later years.

With minor exceptions, the U-3s served in the SM/CMS/UT category throughout the plane's lifetime. In this staff support role, the U-3s served most Air Force MAJCOMs. In 1962 the biggest U-3 users were: Strategic Air Command (SAC)—38; Air Defense Command (ADC)—36; AF Logistics Command (AFLC)—34; AF Systems Command (AFSC)—23; Headquarters Command—17; and Tactical Air Command (TAC)—10. The remaining CONUS U-3s were scattered among Air Training Command (ATC), Continental Air Command (CONAC), and Air University. Pacific Air Forces (PACAF) operated the only U-3s stationed overseas.[134] Several U-3s were transferred overseas later in the 1960s, including a few sent to Vietnam in support of the war (discussed in chapter 5).

The last five U-3s flying the utility transport mission left the inventory at the close of FY 1972. Two other U-3s continued actively flying up through 1975 but SAC used them as combat flying support aircraft. A few other U-3s remained on the books in nonoperating status until they were retired in the early 1980s.

The U-3 enjoyed a 15-year career as the Air Force's primary, propeller-driven, staff-support aircraft. Amassing nearly 1.2 million active duty flying hours during its lifetime, the U-3 added another strong chapter to OSA's heritage. In summary, the U-3 continued the tradition set by the C-45 as a reliable, light twin-engine transport aircraft supporting commanders and their staffs throughout the Air Force. The tradition for propeller-driven, OSA-type aircraft continued in the mid-1970s with the introduction of the Beech C-12A. However, not long after the U-3 began flying, the Air Force staff support mission received its first jet aircraft—the T-39.

The North American T-39 Sabreliner: OSA Enters the Jet Age

When the Air Force issued the requirement for the C-140 (UCX) in August 1956, it also released one for a utility trainer experimental (UTX). In a unique variation of the off-the-shelf principle, the Air Force first issued a design specification without a promise to order any aircraft. Instead of receiving governmental development funds, potential contractors had to design, build, and fly a prototype using their own money.[135] This strictly private venture setup made the UTX one of, if not the first, fly-before-you-buy procurement.

Fortunately for North American, the UTX was already in the early design phase for a small, two-engine business jet, designated the NA-246, when the Air Force announced the UTX requirement. Seeing a ready-made market for its plane, North American decided to build the NA-246 to meet the USAF's requirement for a utility and combat readiness trainer.[136] On 27 August 1956, North American went public with its decision and spent the next 21 months in design. Although North American completed the six-seat prototype in May 1958, engine problems delayed the plane's first flight by four months to 16 September 1958. During the next three months, the General Electric J85 turbojet-equipped prototype underwent USAF Phase II flight evaluation at Edwards AFB before successfully completing the testing in December 1958. In January 1959, the Air Force placed an order for the first seven production models, to be designated the T-39.[137]

Of these first seven planes, five were A models and two B models, all with new Pratt and Whitney J60-p-3 engines.[138] The T-39Bs (sixth through eleventh production aircraft), designed as fighter crew trainers and costing $2,625,000 each, were equipped with the same all-weather search and range radar used in the Republic F-105 Thunderchief. All six B models were initially assigned to TAC's 4524th Combat Crew Training Squadron at Nellis AFB to support F-105 aircrew training.[139]

The T-39A was the basic version with four passenger seats as well as dual control pilot and copilot positions. Costing $960,216 per plane, the A model could be used as a staff transport and for high-speed communications in addition to its primary role of a jet proficiency trainer, allowing senior officers to remain proficient as pilots.[140] Thus, the new T-39As continued the OSA

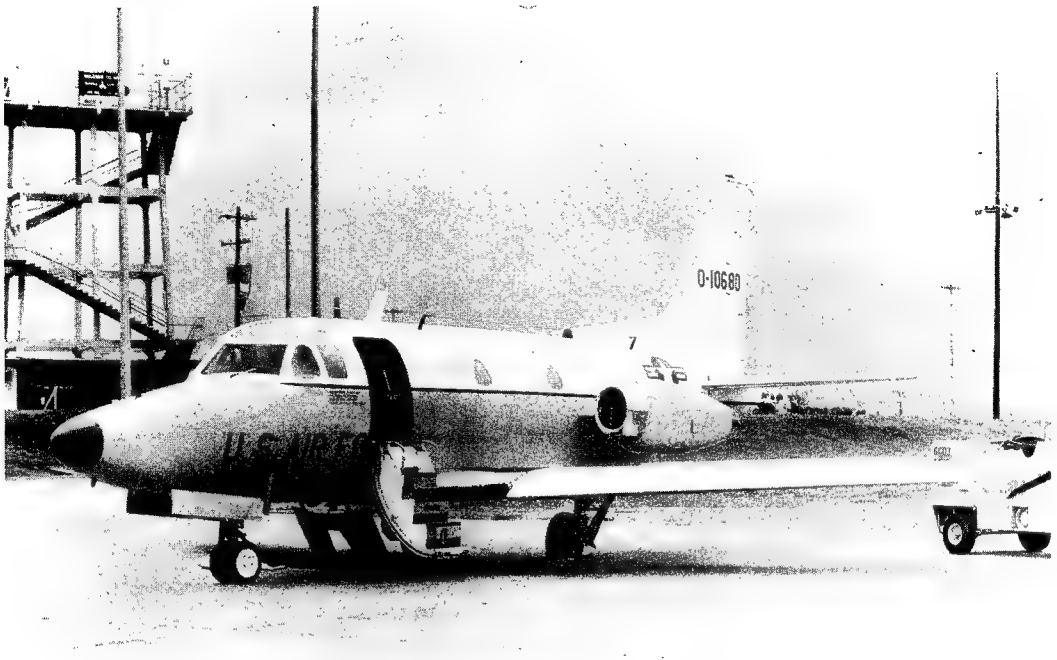
heritage in the dual roles of command mission support (commander and staff support) and operational support (pilot proficiency).

In July 1960, the first production model T-39A made its maiden flight with subsequent delivery to the Air Force in October 1960. By the end of 1960, two more contracts raised the total Sabreliners on order to 94 (88 As plus the six Bs). A final order near the end of 1961 for 55 more A models completed the Air Force's buy at 149 (143 As and six Bs).[141] By the end of FY 1961, the Air Force had accepted all six B models as well as the first eight T-39As. The last five T-39A deliveries occurred in October 1963. In between, factory acceptances were 55 in FY 1962 and 60 in FY 1963 before dropping off with the final 20 planes in FY 1964.[142]

As a jet, the T-39As flight performance signified a substantial improvement over previous or existing OSA-type aircraft. The maximum takeoff and landing weights were 17,760 and 13,000 pounds respectively. With all seats removed, the jet could carry up to 2,500 pounds of cargo. The Sabreliner's maximum speed was 595 mph at 36,000 feet and 563 mph (0.8 Mach) at 21,500 feet but its high-speed cruise was 502 mph at 43,500 feet. Long-range cruise speed was slightly lower—475 mph—at 44,000 feet while the best cost (most economical) cruise speed dropped off to 426 mph at 35,000 feet and 14,500 pounds weight. Approach speed was a moderate 129 mph. The Sabreliner's maximum certified altitude topped out at 45,000 feet on both engines, while the single-engine service ceiling was a respectable 21,500 feet—enough to clear any mountainous terrain it might likely encounter. Range varied with passenger and fuel load. However, 2,000 miles was the maximum range with a typical load and fuel reserves.[143]

Despite the great speed and altitude improvements the T-39A provided over other staff support aircraft, the plane had drawbacks—life expectancy and seating capacity. By the middle of 1965, the utilization rate for T-39s flying the utility transport mission exceeded 1,200 hours per year.[144] Unfortunately, North American designed the Sabreliner with only a 7,500 flying-hour airframe design service life, probably based on anticipated corporate use rates.[145] So, at the Air Force's high, unforeseen use rate, the T-39s faced early retirement—even before the 1960s ended. In addition, the Air Force wanted a mission support plane with greater capacity than the current T-39A offered. So, rather than procure a new airplane, the Air Force contracted North American to rehabilitate the existing T-39As. In addition to tripling the T-39's service life to 22,500 hours, the renovation provided more seats as well as new engines and landing gear spars, thereby increasing the higher takeoff weight. In June 1967, the first altered T-39A left North American's Los Angeles plant. Upgraded to carry seven passengers, the modified T-39As takeoff weight increased to 18,650 pounds.[146] Four A models underwent further conversion in the late 1960s. In 1968 three planes became F models used by AF Communications Service (AFCS) for flight check duties. The next year another A model was converted to an NT-39.[147]

Beginning in 1962, the US Navy took advantage of the Air Force's experience and bought more than 60 T-39s starting with 42 T-39Ds for radar intercept officer training. Later versions included seven CT-39Es for rapid response airlift, the Navy's euphemism for staff support airlift. In addition, the Navy purchased 12 CT-39Gs, 10-passenger versions used for fleet tactical support.[148]



The North American T-39A

From the beginning the Air Force assigned a few T-39As to almost every MAJCOM. By the end of FY 1962, the 36 planes Headquarters USAF programmed for command mission support were initially allocated as follows: ADC—4; USAFE—1; AFLC—4; AFSC—4; ATC—2; CONAC—1; Headquarters Command—7; MATS—3; PACAF—1; SAC—7; and TAC—2. Unfortunately, less than 30 T-39As actually reached their units in FY 1962 so such commands as USAFE and PACAF did not receive their first jets until FY 1963.[149] Eventually, Alaskan Air Command, Air University, and AF Communications Service also received T-39s for CMS/UT but CONAC never did.

Drawdowns, Transfers, and Mission Changes

Since the Air Force changed its flying activity definitions in 1959, a gradual shifting of planes and flying hours occurred between the various flying activity categories containing the staff support mission and aircraft. Table 8 shows this change from 1959 through 1975.

Several trends are visible in table 8. Most notably, from 1959 through 1975, the Air Force reduced its total aircraft inventory by more than one-half and its operating active aircraft by nearly 60 percent. The individual mission categories experienced similar upheavals as well.

Table 8

USAF Aircraft and Flying Time (excluding Reserve Components)

	Total		Operating Active		Operational Support		CMS/UT[a]		Administrative	
Year	# A/C	Fly Time	# A/C	Fly Time	# A/C	Fly Time	# A/C	Fly Time	# A/C	Fly Time
1959	19,416	7,625,954	15,263	7,576,706	1,670	1,254,745	879	416,999	105	78,267
1960	18,236	7,126,190	13,657	7,099,644	1,518	1,077,478	1,048	628,146	111	76,235
1961	15,709	6,361,195	12,467	6,330,195	1,409	756,222	920	587,670	107	71,288
1962	15,897	6,276,439	12,505	6,253,412	986	593,958	986	580,637	102	70,914
1963	15,597	5,931,743	11,817	5,904,743	612	349,437	920	557,657	116	74,345
1964	14,282	6,028,207	10,986	6,603,561	389	260,866	900	584,570	112	79,985
1965	14,095	6,005,146	10,944	5,987,371	276	183,225	866	581,265	117	81,101
1966	13,928	6,124,657	10,531	6,106,222	187	119,867	718	535,043	88	70,782
1967	14,449	6,565,135	10,520	6,544,224	112	73,136	604	444,469	83	60,135
1968	14,917	7,067,659	11,243	7,104,723	66	36,801	511	371,282	115	87,577
1969	13,688	7,200,455	10,815	7,166,599	39	22,040	430	366,722	105	87,066
1970	12,659	6,326,157	9,833	6,300,329	40	21,401	398	315,162	100	86,175
1971	11,832	5,583,653	9,143	5,561,754	89	25,381	320	268,039	112	84,803
1972	10,971	4,969,543	8,254	4,955,066	88	42,021	257	125,685	109	84,410
1973[b]	9,783	4,368,548	7,518	4,350,928	83	35,839	211	174,589	107	84,205
1974[b]	9,183	3,271,992	7,226	3,265,471	71	33,963	163	128,919	198	107,231
1975[b]	8,622	3,078,263	6,348	3,072,888	10	17,951	68	73,999	148	143,472

[a]All figures for CMS/UT category from *History of USAF Flying Hours (HUFH)* [*USAFSD*s ceased reporting this information after FY 1972].

[b]Flying time figures for all columns for 1973, 1974, and 1975 from *HUFH*s; number aircraft for MIT/OS, CMS/UT, and administrative columns also from *HUFH*s (*USAFSD*s ceased reporting this information after FY 1972) and represent the average actual aircraft during the fourth quarter of the fiscal year.

Source: *USAF Statistical Digests: FY 1959* through *FY 1975; and History of USAF Flying Hours: 1958-1960* through *1975.*[150]

Proficiency flying, especially under the operational support category, almost completely vanished. Several factors caused this huge reduction. First, the Air Force gradually retired its older reciprocating engine aircraft. Many such World War II and Korean War vintage cargo-type planes as C-45s, C-47s, C-54s, C-97s, C-117s, and C-118s reached the end of their service lives during the 1960s. Growing more costly to maintain, those older planes not needed to support the war in Vietnam became expendable.

Second, in the mid-1970s, the death knell sounded for those 400-odd piston engine planes that had earlier escaped the scrap pile.The 1973 Arab-Israeli War and resulting Arab oil embargo caused aviation fuel prices to triple, skyrocketing from less than 30 cents to more than one dollar per gallon between 1970 and 1975.[151] The increasing maintenance costs combined with exorbitant fuel prices made it difficult to justify operating the remaining reciprocating engine planes to the US Congress. So, in late 1974, Gen David C. Jones, chief of staff, Air Force (CSAF), decided to retire nearly all piston engine aircraft from the Air Force inventory.[152] Several commands apparently

objected to the decision, citing unique missions fulfilled only by reciprocating engine planes. Evidently General Jones listened because he spared the O-2 (used for forward air control) and some Reserve and Guard support planes. However, he rejected complaints regarding the active duty mission support categories. On 11 February 1975, the CSAF directed the retirement of all active duty reciprocating engine support aircraft, according to an Air War College research paper by Col Richard F. Rader, former OSA commander and CT-39 program manager at Headquarters MAC.[153]

The third factor reducing proficiency flying was a change in flight pay requirements brought on by the 1974 congressional passage of the Aviation Career Incentive Act (ACIA). Instead of requiring pilots to fly a certain number of hours per month or quarter to receive their flight pay, the Air Force instituted the gate system, whereby flight pay became based on the number of years the pilot flew in a designated operational or staff billet requiring continual operational flying readiness.[154] The ACIA and gate system thus eliminated the requirements for thousands of staff pilots to maintain flying currency so far fewer proficiency aircraft were needed.

Although only a few T-39s were ever officially assigned to operational support during this period (one in FY 1961 and three in FY 1962), T-39s still functioned as proficiency flying aircraft due to their assignment to the utility transport and administrative categories.[155] AF Regulation (AFR) 27-15, *Aerospace Vehicle Distribution* (29 September 1967), used the term indirect support aircraft to encompass all executive (code SA) and staff/proficiency (codes SC, SD, and SI) aircraft as well as special activity aircraft (code ZA).[156] These titles and codes translate to administrative (SA), combat unit support (SC), utility transport (SI), operational support (SD), and special activity (ZA). AFR 27-15 also defined the assignment basis for each code as shown in table 9 (SC not included since it does not relate to T-39s or the staff support mission).

Table 9

Indirect Support Aircraft Assignment Basis as of 29 September 1967

HUFH Category	AFR 27-15 Title (Code)	Assign Basis	Corollary Mission
Administrative	Executive (SA)	Mission Necessity	Pilot Support
Utility Transport	Staff/Proficiency (SI)	Mission Necessity	Pilot Support
Operational Support	Staff/Proficiency (SD)	Pilot Support	Not Stated
Special Activity	Special Activity (ZA)	Mission Necessity	Pilot Support If Able

Source: AFR 27-15, *Aerospace Vehicle Distribution,* 29 September 1967; and *History of USAF Flying Hours: FY 1967.*

The assignment basis for each category in table 9 is consistent with the flying activity definitions contained in the *USAF Statistical Digests*. Pilot support (proficiency) was the primary mission of operational support although airlift was a beneficial by-product for those SD-coded cargo aircraft. Mean-

while, the mission necessity for utility transport was staff support airlift with pilot proficiency a useful but not necessary bonus.

However, the next revision to AFR 27-15, dated 7 April 1969, made an important change. The new regulation switched utility transport's assignment basis from mission necessity to proficiency requirements with productive airlift as a by-product thereof; the same as for operational support.[157] Although the new AFR 27-15 offered no explanation for the change, it is probably the result of simply needing more aircraft to support pilot proficiency requirements. With operational support's drawdown to less than 100 after 1967 (see table 8), the Air Force needed utility transports to take up the slack.

Slightly differing from AFR 27-15's terminology, Air Force Manual (AFM) 60-1, *Flight Management Policies,* dated 22 September 1970, simply referred to the S-coded planes as support category aircraft.[158] In addition, AFM 60-1 clearly defined the SI and SD codes, under the combined heading staff/proficiency, as aircraft assigned in support of aircrew proficiency flying. The term *staff/proficiency* recognizes that most SI-coded and a few SD-coded aircraft can provide staff travel and/or logistics support as by-products of proficiency operations.[159] Thus, although utility transport was clearly in the pilot proficiency business by 1970, UT clearly still served as an important resource for staff support travel.

Sharing the same mission priorities no doubt blurred the difference between the utility transport and operational support categories. However, as the Air Force reduced its aircraft inventory between 1959 and 1975, one general distinction slowly emerged among aircraft types within OS and UT. Operational support mainly contained old fighter-type trainer aircraft while utility transport primarily contained cargo and cargo-type (i.e., T-29) planes. Indeed, the OS aircraft in fiscal years 1969, 1970, and 1971 were all T-33s while UT-assigned planes were almost entirely cargo-type aircraft.[160]

Another trend in table 8, nearly paralleling operational support's course, is the almost continuous reduction in utility transport planes. Of course, UT's decline is partly attributable to the general reduction in Air Force aircraft. As previously mentioned, the Air Force retired almost all piston-powered planes, many of which were UT-coded C-47s, C-54s, C-97s, and C-118s. However, the Air Force's all turbine force decision also caused many relatively new reciprocating engine utility transport aircraft to retire, including T/VT-29s and C/VC-131s. In 1974 the 163 remaining UT planes were mostly propeller-driven T/VT-29s (90 in four models), C/VC-131s (18 in four models), and C/VC-118s (22) in addition to the jet-powered T-39s (42).[161] Just the next year, the inventory fell to just 68 UT aircraft with 14 T/VT-29s, eight C/VC-131s, and nine C/VC-118s as well as the 22 T-39s.[162]

Until 1968 staff support T-39s were assigned to the utility transport category. However, with UT's primary mission changed from mission necessity (i.e., staff airlift) to pilot proficiency with airlift as a by-product, a problem arose for the T-39As. The steady demise of proficiency required the Air Force to find a new mission for the T-39s to justify their continued existence. That new mission was administrative airlift.

The administrative category, long populated with the same mix of planes as utility transport, experienced a similar loss of its piston-powered aircraft. In 1974

there were 29 T/VT-29s, 36 C/VC-131s, and 43 C/VC-118s; but by the end of 1975, those numbers dropped to 10 T/VT-29s, 14 C/VC-131s, and 18 C/VC-118s. However, instead of declining like utility transport and operational support, the administrative inventory actually gained overall, mostly due to the transfer of T-39s from the utility transport to administrative codes as well as the initial assignment of several C/RC-135s as administrative aircraft.[163]

From 1964, when the last new T-39A entered the inventory, through 1974, the last full year before T-39 CONUS consolidation began under MAC, the T-39A force remained fairly stable in total numbers. However, the tumult in proficiency flying and flying activity codes, combined with the MAJCOMs' fervent desire to keep their T-39s, led to the change from UT to administrative categories. This shift is evident in tables 10 and 11. Table 10 shows the T-39 aircraft breakdown by flying activity category from 1961 through 1975. Table 11 shows the flying times, operative active as well as the major staff support categories (OA aircraft only). Again, the numbers do not include the reserve components. Their only T-39s assigned were two B models used by the ANG from FY 1972 through FY 1979. The total aircraft and OA aircraft columns include the six B, three F, and one NT models.

Beginning in 1968, the T-39A's switch to the administrative flying category is clearly seen in tables 10 and 11. In 1974 the Air Force transferred most T-39s to the administrative category to protect this valuable resource from the operational support axe and prepare for support airlift consolidation. By June 1975, almost all T-39As belonged to administrative airlift. Table 12 shows this transfer in another

Table 10

T-39 Aircraft by Fiscal Year (Fourth Quarter)
(Total Programmed, Total Average Actual[AA],
and AA for Flying Categories)

Year	Programmed	AA	CMS/UT	Admin	Special Activity
1961	13	9	0	0	0
1962	62	49	27	0	0
1963	123	102	83	0	0
1964	146	146	120	0	0
1965	145	136	103	0	0
1966	143	144	111	11	11
1967	144	131	102	9	9
1968	131	128	90	8	8
1969	141	119	77	10	10
1970	142	122	79	9	9
1971	140	118	81	9	9
1972	138	110	79	5	5
1973	140	106	69	6	6
1974	137	128	42	1	1
1975	147	124	22	0	0

Source: *History of USAF Flying Hours: FY 1960/1962* through *FY 1975.*

Table 11

T-39 Flying Time

Year	Total OA	CMS/UT	Admin	Special Activity
1961	1,141	763	0	0
1962	14,102	6,311	0	0
1963	51,340	43,226	0	0
1964	119,619	109,939	0	0
1965	140,729	129,405	0	14
1966	154,350	132,287	0	8,721
1967	155,515	129,936	0	11,960
1968	146,212	110,984	21,071	10,928
1969	149,620	101,878	26,042	8,108
1970	112,324	102,929	25,068	11,821
1971	130,904	93,115	22,391	9,730
1972	126,926	89,205	23,750	7,663
1973	117,364	80,582	27,422	6,692
1974	111,182	53,434	53,150	1,644
1975	119,739	25,114	91,043	8

Source: *History of USAF Flying Hours: FY 1960/1962* through *FY 1975.*

Table 12

T-39 Aircraft by Command and Flying Category: FYs 1964, 1973, 1974, and 1975

	Total OA				CMS/UT				Administrative				Special Activity			
Command	64	73	74	75	64	73	74	75	64	73	74	75	64	73	74	75
ADC	13	7	7	5	13	7	0	0	0	0	7	5	0	0	0	0
AFLC	12	10	11	9	12	4	1	0	0	6	10	9	0	0	0	0
AFSC	11	9	11	10	6	4	1	0	0	1	6	7	0	1	1	0
ATC	19	4	8	4	4	1	3	2	0	3	3	2	0	0	0	0
AU	0	1	2	2	0	0	0	0	0	1	2	2	0	0	0	0
HQ Cmd	13	13	17	17	13	5	0	0	0	8	17	7	0	0	0	0
MATS/MAC	4	10	11	18	4	9	4	2	0	1	7	16	0	0	0	0
SAC	28	15	19	14	28	12	15	11	0	3	4	3	0	0	0	0
TAC	14	15	16	20	8	14	11	6	0	1	5	14	0	0	0	0
AFCS	0	2	2	2	0	0	1	0	0	0	0	0	0	0	0	0
AAC	0	1	1	1	0	1	1	0	0	0	0	1	0	0	0	0
PACAF	10	10	9	8	10	5	5	1	0	0	4	7	0	5	0	0
USAFE	22	9	14	14	22	7	0	0	0	2	14	14	0	0	0	0
TOTALS:	146	106	128	124	120	69	42	22	0	26	79	97	0	6	1	0

Notes: 1. Numbers of nonoperating active (NOA) were: 1964—0; 1973—30; 1974—3; 1975—3.

2. Aircraft not in CMS/UT, admin, or SA but part of total OA were assigned to such activities as student and crew training (under ATC and TAC), test support (under AFSC), and combat flying support (under AFCS).

Source: *History of USAF Flying Hours: FYs 1964, 1973, 1974,* and *1975.*

way—by command and activity code assignment (OA aircraft only)—for FY 1964 (the first year all T-39s were operational) as well as FYs 1973, 1974, and 1975.

Not surprisingly, throughout the years the biggest T-39 owners and operators were also the biggest commands—SAC, TAC, Headquarters Command, AFLC, and USAFE. Despite its large size, the Military Airlift Command did not own its fair share of T-39s but probably did not need to since MAC had access to other cargo planes for staff support use. Why some commands, most notably SAC, did not switch their T-39 categories in the early 1970s is uncertain. However, it made little difference what each command did because most would soon lose their staff support T-39s to MAC as part of the airlift consolidation process. That transfer is first visible in the slight increase in MAC's T-39 inventory in FY 1975 and is discussed in more detail in the next chapter.

Heritage and Change

From its 1916 genesis with General Pershing in Mexico to the T-39's establishment as the core of administrative airlift in 1974, the staff support mission evolved through a series of events and decisions. Each episode supported the need to airlift small numbers of people and limited amounts of cargo quickly, reliably, and responsively. Often operating in short-notice, time-critical situations, OSA's predecessors left a heritage rich in history and achievement if not in glamour. As varied as the ancestors were, one distinctive theme runs through them all—decentralized control. However, this tradition of local command and control changed in 1975, caught up in the Air Force's general airlift consolidation under the Military Airlift Command.

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In addition, each publication reported information in slightly different forms. For example, the *USAFSD*s combined aircraft and flying time figures for SA and CMS/UT in the same tabular column under the title Special Activity and Utility Transport, whereas the *HUFH* broke down SA and CMS/UT into individual groups. Also, the *USAFSD*s gave aircraft figures as of the last day of the quarter of fiscal year. Meanwhile, the *HUFH*s cited quarterly programmed aircraft (number authorized by Headquarters USAF) and "average actual" (average number on hand during the entire quarter). This average versus end of quarter reporting contrast appears in the differences in aircraft often reported between the two publications.

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Chapter 3

Consolidation and Transition

The mid-1970s were tumultuous for airlift. Even before the fall of South Vietnam and the end of US involvement in Southeast Asia, the intense debate over the issue of airlift consolidation began anew. Even mentioning the issue evoked strong emotions from nearly everyone affected. Although many people and organizations played parts and numerous side issues were involved, the topic's crux boiled down to the doctrinal question of who should own tactical airlift—Tactical Air Command (TAC) and the theater commanders or Military Airlift Command (MAC). Meanwhile, staff support airlift was caught up in this amalgamation issue.

From 1975 to 1993, the Military Airlift Command owned all CONUS small administrative airlift and OSA resources. During part of that same period, MAC also commanded overseas OSA assets. This chapter covers the first nine of those eventful years, from 1975 through 1983. It begins with the airlift consolidation battle in general and its effect on staff support airlift in particular, continues with a discussion of the CT-39As' operations in the late 1970s, and concludes with an examination of the early 1980s and the plans to replace the CT-39A fleet with new C-12Fs and C-21As.

General Airlift Consolidation

This paper's objective is not to tell the story of airlift consolidation. That very complex issue (lasting over several decades) is well covered in other publications, most notably *Airlift Doctrine* by Lt Col Charles E. Miller (a previous MAC research fellow) and the *History of Military Airlift Command: 1 July 1974–31 December 1975*. However, a short synopsis of the problem will assist in understanding how the question related to administrative airlift's consolidation.

In short, the airlift consolidation question revolved over ownership of tactical airlift—C-130s, C-123s, and C-7s particularly. TAC and the theater commanders wanted to keep tactical airlift while MAC wanted to acquire the planes and mission. Historically, TAC and the theater commanders had exercised command and control over tactical airlift and its predecessors, combat cargo and troop carrier airlift. Understandably, TAC and the theater commanders strongly resisted any attempt to strip away tactical airlift from their control. Meanwhile, MAC argued that tactical airlift should be part of the overall airlift system. MAC desired a single airlift force to provide complete,

responsive control over the delivery of personnel, equipment, and supplies from the CONUS to the theater airheads (via strategic airlift), then on to the forward air bases, assault airstrips, or drop zones (via tactical airlift). Both sides of the argument cited numerous historical precedents to back up their positions, including pros and cons from the recent Vietnam conflict.[1]

On 29 July 1974, after lengthy debate within the DOD and Air Force, the DOD issued a program decision memorandum (PDM) directing "the Air Force to consolidate all airlift under MAC as single manager, as part of an effort within the DOD to achieve greater reliance on service mutual reinforcement."[2] One month later in a message to MAC and all major Air Force activities, Gen David Jones, the chief of staff, Air Force (CSAF), cited the bottom-line reasoning for the consolidation as an effort to achieve better integration of overall airlift.[3] On 21 November 1974, Headquarters USAF released details of strategic and tactical airlift's worldwide consolidation under MAC.[4] Citing its justification, the Air Force stated:

> Consolidation under a single manager will increase efficiency in the utilization of total airlift capability; provide theater commanders greater flexibility in meeting airlift requirements; and accelerate and simplify the decision-making process in cross utilization of strategic and tactical airlift.[5]

Less than two weeks later, CONUS tactical airlift assets transferred from TAC to MAC according to MAC/TAC Proposal (Prop) 74-30. On 1 December 1974, TAC's airlift wings at Pope AFB, Langley AFB, Little Rock AFB, and Dyess AFB, as well as several aerial port squadrons and numerous supporting organizations, became part of the Military Airlift Command.[6] Overseas transfers were more complicated and took longer to transpire.

In Europe, most USAFE airlift resources transferred to MAC on 31 March 1975. Major units included USAFE's aeromedical airlift squadron and aeromedical evacuation group, both at Rhein-Main AB, Germany, and an aerial port squadron at Royal Air Force (RAF) Mildenhall, United Kingdom. Three months later, MAC assumed host responsibility for Rhein-Main AB. No C-130 units transferred since no such units were permanently assigned to USAFE at the time. On 25 October 1975, MAC and USAFE completed arrangements for MAC to assume operational command, control, and management of theater airlift for European Command (EUCOM). According to the *History of Military Airlift Command: 1 July 1974–31 December 1975*, this agreement established the framework for MAC's complete assumption of airlift management responsibilities within the European theater.[7] As part of that framework, USAFE's staff support airlift assets would soon transfer to MAC, although not as part of the initial agreements.

Pacific Air Forces (PACAF) airlift assets also transferred to MAC on 31 March 1975. Major units were a tactical airlift wing, two C-130 squadrons, an aeromedical evacuation group, and an operations squadron, all at Clark AB, Philippines, as well as another C-130 squadron at Kadena AB, Okinawa, and an aerial port squadron in Thailand. In August 1975, PACAF and MAC reached an agreement "for the effective management and the command and

control of Pacific Command (PACOM) airlift."[8] As in Europe, staff support airlift was not included. Several more years would pass before PACAF reluctantly relinquished command. Even then, PACAF retained day-to-day operational control of staff support airlift resources.

Similar airlift asset transfers occurred in the US Air Forces South (USAFSO) and Alaskan Air Command (AAC) regions, both on 31 March 1975. One distinctive feature for AAC included its retention of operational control over MAC tactical airlift as well as search and rescue assets within AAC's area.[9]

Unfortunately, while having MAC as the single manager for all strategic and tactical airlift created one supposedly seamless airlift system, consolidation created a problem overseas. The new arrangements overseas conflicted with the cherished doctrine known as unity of command. To overcome the conflicts, the Air Force developed the theater airlift manager (TAM) concept. Under this innovative plan, the TAM managed MAC's intertheater airlift while in-theater as well as the Air Force component commander's (AFCC) theater airlift support.[10] The single airlift management agreements cited above for EUCOM, PACOM, USAFSO, and AAC were a result of the TAM concept.

Thus, by the spring of 1975, MAC commanded all major airlift assets throughout the world. In addition, MAC had responsibility for airlift management control within the overseas theaters' unified commands. At last, the global airlift system, envisioned by so many for so long, had become a reality.

Staff Support and Administrative Airlift Consolidation

The debate over airlift consolidation did not directly address the issue of support airlift. Historically, the using commands and activities have always owned and operated staff support airlift. However, the question of who should command and control staff support airlift and the small utility aircraft that flew the mission was not new.

Historical Ownership

During World War II Air Transport Command (ATC) and the theater air force commands came to loggerheads over who should control intertheater airlift forces and supporting service units. Air Transport Command voiced several complaints concerning duplication of services and proliferation of air transport units in the overseas theaters. Following an ATC recommendation in March 1944, the Air Staff directed the Army Air Forces (AAF) Board to study the issues. What emerged from two AAF Board studies were recommendations to make ATC responsible for intratheater as well as intertheater supply delivery, except for missions belonging to the Troop Carrier Command and its units. The report also suggested restricting cargo aircraft in Air Service Command to small utility planes.[11]

On 17 August 1944, the Army Air Forces acted on the AAF Board's recommendations by issuing a new AAF Regulation (Reg) 20-44, *Responsibilities for Air Transportation.* In a backhanded way, AAF Reg 20-44 defined the question of ownership and control over the staff support mission and aircraft by stating:

> The assignment of cargo transport aircraft to agencies other than the Air Transport Command and Troop Carrier Command (including troop carrier training activities) will be restricted to the utility cargo (UC—) transport types and will be limited to those essential for emergency maintenance and reclamation, emergency delivery of supplies and equipment, staff administrative purposes and maintenance of flying proficiency. The provision of additional air transportation or the operation of any scheduled air transport service is a function of the Air Transport Command.[12]

Apparently the theater commanders still did not get the message so the Army Air Forces issued an amended AAF Reg 20-44 on 11 November 1944. Using stronger language to define support airlift's role and control, AAF Reg 20-44A stated:

> The assignment of cargo transport aircraft to agencies other than the Air Transport Command and 1 Troop Carrier Command will be limited to those essential for staff administrative purposes, training, maintenance of flying proficiency, and for local transport services operated for emergency maintenance, reclamation, and emergency delivery of supplies and equipment. In no case will these local services duplicate the services of Air Transport Command, which command is primarily responsible for the operation of all military air transport conducted under the jurisdiction of the commanding general, AAF.[13]

With AAF Reg 20-44 and AAF Reg 20-44A, the Army Air Forces clearly defined the roles and missions for small utility and staff support aircraft. Thus, the precedent was set for major commands and other activities to maintain their own personal fleet of small utility and cargo aircraft to meet the command's unique needs not otherwise met by Air Transport Command or its successors, Military Air Transport Service (MATS) and MAC.

The next time the staff support control issue came up was related to the Army's fixed-wing aircraft (and helicopter) ownership. In May 1949, the Army and Air Force agreed to allow the Army to have some small (up to 2,500 pounds) *organic* fixed-wing aircraft. Another Army–Air Force agreement in October 1951 removed the weight restriction but allowed Army organic aviation to support combat and logistical functions up to 75 miles deep behind the front lines. However, the Korean War brought more interservice squabbles so a third agreement, signed in November 1952, set a weight limit of 5,000 pounds for Army fixed-wing planes.[14] According to Air Force Letter (AFL) 55-5 (19 November 1952), *Memorandum of Understanding Relating to Army Organic Aviation,* the small Army aircraft (and helicopters) "were for aerial observation, command control, aeromedical evacuation within the combat zone, miscellaneous other tasks, and 'transportation of Army supplies, equipment, personnel and small units within the combat zone."[15] Although all the agreements pertained to helicopters as well as small, fixed-wing, utility planes, the precedent was thus set in the early 1950s for the Army, as well as the Navy and Marines, to own and operate their own staff support aircraft

fleets under the title of organic aviation. This interservice issue created problems during the Persian Gulf crisis in 1990/1991 and is currently the subject for possible consolidation under US Transportation Command (USTRANSCOM). Both subjects are covered later in this paper.

With staff support's roles, missions, and aircraft well-defined and ownership debate resolved for the Air Force and its sister services by the early 1950s, the support airlift did not receive much attention for the next 15 years. However, beginning in 1965 and extending into the early 1970s, several organizations and individuals issued reports and papers critical of indirect support airlift.

Evaluation and Criticism in the Mid-1960s and Early 1970s

Early criticism of Air Force mission support (MS) airlift usually focused on the types of aircraft employed or how well they were scheduled. Proficiency flying and efficient scheduling were at the heart of the matter. No one seemed to question that each MAJCOM, indeed every base, operated its own private airline with its administrative/mission support aircraft.

Command Versus Air Force Support. In his 1965 Air Command and Staff College thesis, "An Analysis of the USAF Flying Proficiency Flying Program," Capt Joe H. Snow suggested that the T-39A was purchased for political reasons instead of the more efficient, versatile, and cost-ineffective Fairchild F-27. Captain Snow effectively supported his arguments with hard facts and logical suppositions. However, from an OSA consolidation standpoint, the paper's importance lies in the mission support airlift role, not in mention of any specific aircraft.

Although not his intention, Captain Snow brought out the fact that mission support aircraft were command and base support, not Air Force support planes. He quoted AFM 60-1 (15 May 1964) which said mission support aircraft were for flying conducted to support the command mission not the overall Air Force mission.[16] Further emphasizing the command airline concept, Captain Snow quoted Strategic Air Command (SAC) Reg 76-4 (20 January 1964) that stated "Base assigned administrative aircraft . . . should be utilized for the movement of property and personnel between SAC installations and installations and other depots of other commands."[17] What this statement really meant was that SAC mission support aircraft were to move people and parts directly supporting SAC, not the other commands. After all, the other MAJCOMs had their own MS planes. Captain Snow also described how, according to SAC Reg 60-6 (21 May 1964), base flight scheduling (BFS) supposedly reviewed all known requirements for movement of personnel or cargo, but he did not explain how BFS was supposed to acquire such requirements information.[18] Indeed, there was no system for consolidating Air Force-wide, or even commandwide, requests. In fact, even the individual bases had a difficult time coordinating their own requirements and efficiently using their mission support resources, much less helping out any other bases or com-

mands. However, such administrative airlift inefficiencies soon received high-level scrutiny.

The 1966 Comptroller General Report. In September 1966, the comptroller general of the United States released a report to the Congress of the United States entitled *Potential Savings Through Improved Utilization of Space Available on Administrative Military Aircraft*. Written by the General Accounting Office (GAO), the report said the Air Force could save money by more efficiently using its mission support aircraft for official travel. The GAO concluded:

> On the basis of our analysis at four installations, . . . substantial savings in expenditures for air travel could have been realized through more stringent control of travel authorizations for personnel who used commercial service on the same day administrative military flights were being made to the same, or nearby, destinations.[19]

In effect, the GAO report suggested taking business away from the airlines, a practice Congress and the airlines have often complained about while arguing to reduce or eliminate OSA altogether. Unfortunately, the GAO report, as well as the Air Force responses, focused on base-level travel improvements and not on coordinating command and Air Force-wide travel requirements through a consolidated request and scheduling system.

The 1970 Redistribution Conference. As the 1970s began, the Air Force inventory underwent significant changes. Aware that the entire indirect support airlift fleet (administrative, command, mission support, and operational support) was rapidly dwindling, Headquarters USAF convened an Indirect Support Aircraft (ISA) Redistribution Conference at the Pentagon in September 1970. Attendees were charged to find "ways and means to remix and revalidate the staff/proficiency and special activities portions of the ISA fleet."[20] Little could be found about any specific conference findings or recommendations. However, according to an Air Force audit report issued in 1971 (discussed below), as a result of the conference "further reductions in the [ISA] fleet size are being made." However, the reductions and any efficiency improvements were not enough to please the Air Force's auditors.

The 1971 Air Force Audit. On 26 March 1971, the auditor general of the Air Force issued an audit report entitled *Management of Indirect Support Aircraft*. The report cited an FY 1970 Office of the Secretary of Defense (OSD) guidance memorandum that recommended an Air Force indirect support fleet of 515 aircraft. According to the audit, the indirect support aircraft were assigned for executive and administrative airlift and support of aircrew proficiency flying, and 515 planes would cost approximately $90 million annually to operate (exclusive of crew costs).[21] Since there were about 700 indirect support planes in the inventory at the end of FY 1970, the Air Force took steps to reduce the number to the OSD-directed level.[22]

Meanwhile, the audit's stated objective was "to appraise the effectiveness and efficiency of the management of the indirect support aircraft fleet."[23] During the July through September 1970 investigative period, the audit team visited 20 ISA unit locations (18 CONUS and two overseas) operated by nine

different commands. The final audit report contained seven major findings and six recommendations.

Among the findings, the auditors concluded that: (1) three of the nine commands had more indirect support aircraft than necessary to meet the Air Force's pilot proficiency support ratios; (2) overall, the Air Force required 52 less aircraft than the number currently assigned; (3) there was a lack of sufficient directive guidance pertaining to the responsibilities at each major management level for the periodic evaluation of aircraft requirements and distribution; (4) numerous missions in excess of minimum proficiency requirements were flown to transport passengers who could have flown via commercial airlines at considerable savings; (5) all CONUS MAJCOMs used operational support (SD-coded) and command mission support [utility transport] (SI-coded) aircraft assigned for proficiency flying to operate scheduled courier flights which primarily provided passenger service between selected intracommand locations; but the flights, by and large, were inefficient, cost-ineffective, and flown by crews who had already completed their proficiency flying requirements; and (6) 23 of the 1,061 missions reviewed were questionable as to propriety.[24]

To achieve more efficient use of resources, the audit made the following recommendations to the Air Staff.

> [First,] improve directive guidance regarding the allocation and validation of aircraft requirements. [Second,] evaluate the entire USAF command courier operation . . . to achieve economical operations. [Third,] instruct MAJCOMs to reevaluate their use and management of indirect support aircraft, adjust the operations as necessary to attain maximum economy and effectiveness, and increase surveillance to ensure adherence to existing directives.[25]

The audit identified ATC, SAC, and TAC as the three MAJCOMs having indirect support planes in excess of pilot proficiency requirements. In addition to owning 40 superfluous reciprocating engine aircraft, the three commands together allegedly operated 12 too many T-39s—three each by ATC and TAC, and six by SAC. At the 1971 flying-hour program of 100 hours per T-39 per month, total excess costs amounted to more than $3 million for the 12 jets.[26] Since the entire Air Force only operated 81 T-39As as pilot proficiency (SI-coded) utility transports in 1971, the audit struck a nerve by claiming nearly one in eight T-39As were excess to Air Force needs.

With little rebuttal, the Air Staff concurred with and responded favorably to the audit report's findings and recommendations.[27] However, the audit mostly confined itself to numbers and management of operational support and utility transport resources due to their pilot proficiency mission. Perhaps more important than what the report found was what the audit did not discuss. First, administrative (SA-coded) aircraft were barely mentioned, leaving the reader with the impression that no problems existed there. Apparently, the audit did not want to delve into what constituted mission necessity for the administrative missions. Second, despite finding inefficiencies in ISA scheduling, the report made no recommendations for any consolidated scheduling, much less unified command and control. However, others would soon

propose such centralized scheduling and general support airlift consolidation was not far behind.

Meanwhile, the audit report caused no immediate changes to the T-39A fleet, but the winds of change were blowing. Total numbers and mission assignments remained fairly consistent in 1972, but the audit's criticism of proficiency flying soon took effect. As discussed in chapter 2, the Air Force began switching T-39As from the utility transport (pilot proficiency) classification to the administrative (executive transport) category in 1973. In the five years following the audit report's release, the T-39A ISA fleet shifted from more than 80 percent utility transport/20 percent administrative to just the opposite ratio with over four out of five T-39As assigned as administrative aircraft by 1975. However, in reality the planes still flew the same day to day support airlift missions in 1975 as they had in 1971 and earlier. The best way for the Air Force to avoid losing its executive airlift T-39As was to change the plane's mission in name, if not in actuality.

A Centralized Scheduling Proposal. One of the 1971 audit's two glaring omissions was not mentioning centralized scheduling as a means of improving indirect support airlift efficiency. Certainly the MAJCOMs did not want to give up any control of their staff support aircraft, and centralized scheduling meant losing that authority. However, with support aircraft rapidly declining in numbers while executive airlift requirements continued growing, some came to the conclusion that fresh alternatives to business as usual were needed. Recognizing the inefficiencies cited in the 1971 audit report as well as relying on personal knowledge, one Air Force major suggested the unspeakable—centralized scheduling for indirect support airlift.

In May 1973, Maj Bruce B. Alter submitted a research paper entitled "Centralized Scheduling of Mission Support Airlift: A Feasibility Analysis," to the Air Command and Staff College at Maxwell AFB, Alabama. Using hard data and relying on his 12 years of personal experience as a T-29 and C-131 pilot, as well as mission support scheduler and MAJCOM T-29/C-131 flight examiner, Major Alter correctly recognized the predicament that indirect support (which he termed *mission support*) airlift faced in the early 1970s. On one hand, mission support served two, often conflicting, purposes—aircrew flying proficiency and *opportune airlift* to fulfill requests for staff travel and logistics support flights for host and tenant units.[28] On the other hand, limited and ever diminishing MS resources made the flight manager's job increasingly difficult. Major Alter saw the resulting problem as the reason for his study:

> Each base with mission support aircraft operates these aircraft, for all practical purposes, independently from every other base. Coordination between bases or units on mission support schedules is the exception, rather than the rule. The result is duplication of effort, and the inefficient utilization of extremely scarce resources.[29]

Comparing the February 1973 mission support flight schedules for two southeast US bases, Major Alter showed where 14.9 percent of the flights could have been eliminated by combining missions. The potential savings were significant—approximately 43 flight hours costing nearly $10,000.[30]

Another true-life example of inefficiency occurred when two Air Force System Command MS planes passed each other in the air while flying to their home bases in California and Florida. Both planes were returning empty from the other aircraft's home base, having just dropped off passengers there. Obviously, one plane could have accommodated both missions, saving flight time (one round trip coast-to-coast) and money.[31] Such instances were not uncommon and still occurred in the Pacific, between mainland Japan, Okinawa, and Korea, as late as 1992.[32]

While admittedly very small data samples, these two examples accurately represented mission support scheduling as a whole in 1973 and quite probably for as long as staff support airlift existed. Unit schedulers rarely talked to each other to coordinate schedules and combine missions. From an efficiency standpoint, flying hours and money were being wasted.

Major Alter recommended two fixes to the inefficiency problems. First, he proposed the Air Force study the feasibility of instituting an Air Force mission support airlift single manager with centralized scheduling of opportune airlift.[33] Second, the MAJCOMs should emphasize effective management of the mission support flying program, and encourage intercommand coordination and cooperation.[34]

More Criticism of Proficiency Flying. Despite the auditor general's findings to the contrary in 1971, the Air Force often justified its mission support flights based on pilot proficiency requirements. Still, several Air Force officers questioned proficiency flying and made recommendations, which eventually impacted small staff support aircraft.

Maj Wayne D. Girling questioned the need for the Air Force's pilot proficiency program (PFP) in his 1969 Air Command and Staff College research study, "Proficiency Flying: An Analysis." While acknowledging PFP's original purpose as sound, Major Girling showed how the program had failed to keep up with technology since 1947 and, in its present form, outlived its usefulness. He concluded, "the role of the present Proficiency Flying Program is designed more for retention and maintenance of morale than for flying proficiency."[35] Major Girling proposed reducing the emphasis on proficiency flying for rated staff officers and limit them to flying under the direct supervision of highly qualified instructor personnel.[36]

Since mission support aviation was almost completely supported with proficiency flyers, Major Girling's proposals meant drastically changing the T-39A pilot force to one filled with dedicated line pilots whose primary job was mission support flying, not staff work. While this idea probably received little credit at the time, the switch in pilot force makeup was eventually made in the 1980s when MAC replaced pilot proficiency with pilot seasoning as a major justification for OSA. Out went the need to keep older pilots current—in came the requirement to give experience to new pilots.

A few years later, Lt Col Raymond Wellington, Jr., took another look at proficiency flying in his Air War College research paper "Proficiency Flying: Outlook for the 1970s." Colonel Wellington presented an in-depth review of DOD and congressional boards and hearings since 1934 dealing with the

proficiency flying and flight pay controversies. The paper clearly shows how the Air Force sometimes provided rather suspect information to Congress, continually dragged its feet on implementing congressionally directed changes, and, when the Air Force did follow orders, it was often only in a token manner to appease the critics. Colonel Wellington concluded, "Air Force defense of the [proficiency flying] program to Congress has been extremely weak."[37] Concentrating on the flight pay versus proficiency flying issue, Colonel Wellington offered several innovative ideas including a modification of today's return-to-fly boards. More notably, he suggested prohibiting general officers from administrative flying. Colonel Wellington correctly understood that, "when a general officer flies under such [administrative flying] conditions he is actually taking the flying time of two proficiency pilots—his position and that occupied by the instructor pilot."[38] Colonel Wellington admitted such a proposal could be a sensitive issue but the cost savings, as well as reduced congressional ire, were important.[39] In the years since, little has been done to significantly reduce the numbers of generals flying OSA planes.

The 1973 DOD Audit. In May 1974, the Office of the Assistant Secretary of Defense (Comptroller) issued its *Report on the Interservice Audit of Support Aircraft Utilization.* Looking at all the services, the comptroller concluded the services could save a lot of travel money by using scheduled commercial air or ground transportation instead of military mission support aircraft (just the opposite conclusions from the 1966 GAO report). The report also questioned using nonflying assignment pilots (proficiency pilots) flying the planes instead of full-time pilots. Finally, the audit suggested "strengthening DOD criteria for assignment of support aircraft in order to reduce the number needed for peacetime usage."[40]

Time to Change. While the 1966 GAO report, the 1971 Air Force audit, and the numerous Air University research papers raised a number of important issues and offered several constructive ideas, the 1974 DOD report probably was the final straw in changing support airlift management. While none of the government reports suggested consolidating support airlift ownership or centralized scheduling, such changes made good sense, especially considering the tide of sentiment flowing toward general airlift consolidation. However, a 1974 MAC proposal relating to retiring support airlift's reciprocating aircraft also played a big part in consolidation.

Staff Support Airlift Consolidation: 1974–1975

In January 1974, MAC proposed that all Air Force support-coded reciprocating aircraft be retired and the subsequently lost airlift be replaced with C-141s or commercial airlines. T-39As were to supply necessary pilot proficiency training. With southeast Asian airlift support greatly reduced from wartime levels, MAC wanted to increase its customer base and better use its uncommitted airlift capability.[41] On 6 May 1974, Headquarters USAF rejected MAC's proposal saying such C-141 support use could be controversial and that the MAJCOMs were disinclined to give up their dedicated support

aircraft. However, US Air Forces in Europe (USAFE) had already (13 April 1974) formally asked MAC to institute a MAC European courier service replacing USAFE's eight C-118s with MAC C-141s on the mission. A MAC/USAFE memorandum of understanding (MOU) set 1 July 1974 as the service start date. However, on 25 June 1974, the Air Staff put a hold on the European operation at the last minute.[42]

The Chief of Staff Weighs in. A month later on 31 July 1974, the CSAF told the MAJCOMs that it had received required operational concepts (ROC) to "modernize the Air Force's administrative support fleet [and, more importantly, the CSAF] questioned the justification and need for an administrative support program in the Air Force."[43] The CSAF also tasked the MAJCOMs to devise alternatives for replacing administrative support aircraft. MAC responded by stating "in general, the planned wartime roles of the [support] aircraft would be the same during peacetime, but some expansion might be necessary in the event of war."[44] In the meantime, the CSAF approved, with some revisions, the MAC/USAFE support airlift MOU and, as a result, the European Eagle mission began on 5 September 1974.

Apparently the CSAF agreed with MAC and the other MAJCOMs as to the general need for support airlift. However, according to the official MAC History (1 July 1974-31 December 1975), on 29 August 1974 (one month after the DOD PDM directed consolidation of all airlift under MAC)

> the CSAF directed an in-depth study of support aircraft to examine the feasibility, practicability, and desirability of: "(A) consolidating administrative support aircraft; (B) eliminating older aircraft (T-29, C-118, C-131s); (C) maximizing use of newer aircraft (T-39, C-140, C-135s); (D) determining supervisory and supplement flying requirements; and (E) meeting travel requirements through MAC and commercial air."[45]

A few days later on 3 September 1974, Headquarters USAF held an all MAJCOM conference "to eliminate support-coded reciprocating engine aircraft from the Air Force and consolidate those remaining jet powered support aircraft under one command."[46] The concept that emerged from the conference foresaw CONUS support aircraft pooled at strategically located bases to most efficiently handle official travel needs as well as pilot proficiency requirements. MAC, Air Force Logistics Command (AFLC), and Headquarters USAF were chosen as the potential CONUS single managers. Meanwhile, all overseas T-39s would remain under PACAF and USAFE but also be pooled to fewer locations as much as practicable.[47]

On 7 and 8 October 1974, the Air Staff hosted MAJCOM representatives at a Support Aircraft Conference at the Pentagon.[48] MAC presented its plan to phase out its reciprocating engine support aircraft between October 1974 and June 1975.[49] The Air Staff liked what it heard and began leaning toward MAC as the best choice to assume CONUS support airlift command and control.

At the end of October, the CSAF told MAC "to prepare a detailed implementation plan for centralized scheduling" of CONUS T-39 aircraft.[50] In response, MAC formed an ad hoc division under the director of Airlift

Operations in the Deputy Chief of Staff (DCS) for Operations (MAC/DO) and produced MAC Program Plan (PROP) 75-12.[51] Although not published in final form until 1 March 1975, the draft MAC PROP 75-12 no doubt served as the basis for MAC planning as well as its briefings to the Air Staff in December. However, before MAC could formally present its position, the CSAF made the major decision.

Consolidation Finalized. On 25 November 1974, the Air Staff informed all CONUS MAJCOMs that "MAC has been selected as single manager for pooled T-39 aircraft located in the CONUS."[52] The Air Staff proposed 16 locations for the pooled units, down from the then current 29 sites. The remaining bases were to be: Norton, McClellan, Randolph, Bergstrom, Kirtland, Scott, Offutt, Wright-Patterson, Barksdale, Peterson, Andrews, Langley, Shaw, Maxwell, Eglin, and McGuire. As part of the transition, MAC was to "survey each proposed operating location and develop an implementation plan for consolidation and central management."[53]

Less than a month later, MAC briefed the draft MAC PROP 75-12 to the Air Staff on 19 December 1974. Three major disputed items arose during the discussions. First, MAC wanted 166 more personnel to run the new support airlift system that Air Staff was willing to authorize. Second, MAC argued for a 1.0 crew ratio while Air Staff desired only a 0.5 level to keep full-time pilots to a minimum. Third, some disagreements concerning the proposed passenger priority system's application to the Air Force Reserve and Air National Guard kept the two sides apart.[54]

An Air Staff team came to Scott AFB and briefed the MAC commander, Gen Paul K. Carlton, on 13 January 1975. The same disputed issues arose but most were resolved in follow-on discussions. However, the manpower and priority system differences remained.[55] MAC planners spent the next two weeks devising compromise positions on both issues.

On 30 January 1975, MAC briefed the Air Council on the revised MAC PROP 75-12. The PROP accepted Air Staffs 0.5 crew ratio but included 36 overhead positions (commanders and operations officers) at the proposed squadron and detachment locations. MAC also briefed a priority system only slightly modified from the Air Staff proposal. Attendees agreed to begin implementation on 1 April 1975 pending CSAF approval which came on 11 February 1975.[56]

The Air Staff formally announced the consolidation plan approval in a message released on 22 February 1975. The plan called for reducing CONUS T-39 sites from 29 to 15. McGuire was dropped from the original (25 November 1974) list of pooled operating locations, possibly due to insufficient numbers of supported pilots. Under the unusually rapid implementation schedule, MAC was to begin scheduling its T-39s on 21 April 1975 and have its centralized scheduling system fully operational just four months later. The first aircraft were to transfer to MAC on 11 June 1975 with the final transfer to occur on 10 July 1975.[57]

The CSAF message also explained that validators were authorized at each MAJCOM, separate operating agency (SOA), and Headquarters USAF DCS

or equivalent. The Air Staff charged the validators with consolidating airlift requests from their personnel, assigning the appropriate priority according to the approved 10 tier system (detailed in MAC PROP 75-12), and forwarding the validated request to the MAC central scheduling division at Scott AFB, Illinois.[58]

In addition, the message made it clear what the Air Staff saw as the T-39 programs' overall mission priority: "maximum use of attached pilots as instructors and on airlift missions is required to achieve the primary objective—support pilots."[59] Airlift was to be a by-product of pilot proficiency training. Even the number of T-39s to be stationed at each location was predicated on the number of pilots to be supported (within a 50 NM radius of the base), not on airlift requirements.[60] Yet, the support airlift system would be dependent on the availability of the attached pilots. With the very low 0.5 crew ratio, any T-39 wartime tasking would require attached pilots to abandon their staff positions and fly support airlift missions—not a likely option. Therefore, the T-39s could not really be counted on in a wartime scenario.

Military Airlift Command Program Plan 75-12, *CONUS T-39 Consolidation.* With the release of the 22 February 1975 Air Staff message, MAC went forward and published MAC PROP 75-12 on 1 March 1975. The PROP's objective was "to consolidate 106 CONUS based T-39 aircraft under MAC as the single manager for base/command support airlift."[61] In addition to bringing all CONUS T-39s under MAC, the PROP made several major changes to the overall support airlift structure.

First, the PROP reduced the number of CONUS T-39 bases from 29 to 15 and organized the remaining locations into three military airlift squadrons (MAS) with four detachments (det) each. Maintenance was the responsibility of the host base. Table 13 shows the locations, units, old and new numbers of T-39s, as well as the +/– change and the locations to be phased out.[62]

According to the PROP, all these units were placed under the 89th Military Airlift Wing (MAW) at Andrews AFB, Maryland, for command purposes. The PROP charged the 89th MAW with "responsibility for administration, standardization, training, and safety programs for all assigned units."[63] However, although the 89th exercised command, it did not have operational control, except for local training missions flown by the T-39 squadrons and detachments.

Headquarters MAC/DO retained operational control and exercised centralized scheduling for CONUS T-39 support airlift missions. However, rather than belonging directly to the MAC DO, the PROP placed the central scheduling division under Scott AFB's 375th Aeromedical Airlift Wing (AAW). Seemingly an issue full of potential problems over divided authority, the PROP gave no valid reason for this split alignment or for the divided command and control between the 375th AAW and the 89th MAW.[64] However, the situation was corrected in 1978 when the 89th MAW transferred command responsibilities for CONUS T-39 support airlift to the 375th AAW.

MAC PROP 75-12 established a central scheduling division at Scott AFB "to receive validated requests, consolidate supportable requirements, and task

Table 13

1975 CONUS T-39 Locations and Units

Base (Unit)	Old # T-39s	New # T-39s	Change
Norton AFB, CA (1400 MAS)	4	6	+2
McClellan AFB, CA (1400 MAS, Det 1)	1	5	+2
Randolph AFB, TX (1400 MAS, Det 2)	6	8	+2
Bergstrom AFB, TX (1400 MAS, Det 3)	2	4	+2
Kirtland AFB, NM (1400 MAS, Det 4)	2	5	+3
Scott AFB, IL (1401 MAS)	4	6	+2
Offutt AFB, NE (1401 MAS, Det 1)	14	12	–2
Wright-Patterson AFB, OH (1401 MAS, Det 2)	6	9	+3
Barksdale AFB, LA (1401 MAS, Det 3)	3	4	+1
Peterson AFB, CO (1401 MAS, Det 4)	7	5	–2
Andrews AFB, MD (1402 MAS)*	19	16	–3
Langley AFB, VA (1402 MAS, Det 1)	14	13	–1
Shaw AFB, SC (1402 MAS, Det 2)	2	4	+2
Maxwell AFB, AL (1402 MAS, Det 3)	2	4	+2
Eglin AFB, FL (1402 MAS, Det 4)	3	5	+2
McGuire AFB, NJ	1	0	–1
McChord AFB, WA	1	0	–1
Travis AFB, CA	1	0	–1
March AFB, CA	3	0	–3
Richards-Gebaur AFB, MO	1	0	–1
MacDill AFB, FL	1	0	–1
Pease AFB, NH	1	0	–1
Edwards AFB, CA	2	0	–2
Hill AFB, UT	1	0	–1
Nellis AFB, NV	1	0	–1
Tinker AFB, OK	1	0	–1
Kelley AFB, TX	1	0	–1
Robins AFB, GA	1	0	–1
Hancock Field, NY	1	0	–1

*Includes four aircraft dedicated to the central training facility.

Source: MAC Program Plan 75-12, *CONUS T-39 Consolidation*,1-2, A-I-1.

operating locations for operation of support airlift missions."[65] Soon known as the Administrative Airlift Division (AAD), its personnel manually matched validators' requests to available aircraft and scheduled aircraft to maximize support according to the 10-level priority system that combined three items—duty position, precedence, and command echelon. PROP 75-12 also identified 63 agencies that were authorized to have validators (some agencies were authorized more than one validator). The scheduling system depended on the validators to honestly assign only appropriate priority levels and to forward requests not later than 72 hours before requested pickup time.[66] Experience soon showed that, in general, validators were normally honest but not very

timely. Many requests arrived late or DVs made last minute changes thereby upsetting the delicate, often intertwined schedule. Interestingly, little has changed in either area since 1975.

Each new T-39 unit was expected to support approximately 16 attached pilots per aircraft assigned.[67] Thus, with the 0.5 crew ratio (one full-time pilot for every two planes), a unit with four T-39s would have only a commander, operations officer, and two full-time pilots while supporting more than 60 attached pilots. Initially, the Air Force allocated 335 hours per T-39 per quarter or just over 110 hours per month.[68] Again, for a four-plane unit, the numbers work out to an average flight time of about 12 hours per month for each attached pilot assuming the commander and operations officer flew 20 hours per month and the other two full-time pilots flew 40 hours per month.

As several of the Air University research papers cited earlier questioned, it is doubtful that 12 hours per month flying support airlift missions in a T-39 could adequately maintain wartime readiness for any pilot but especially for a fighter or bomber pilot. Yet, MAC PROP 75-12 presented a strange dichotomy concerning training versus support airlift requirements. On the one hand, the PROP said "flying in excess of local training requirements will be used to provide authorized support airlift, [and] scheduling of local training flights will take precedence over airlift missions."[69] Yet, in the same paragraphs, the PROP stated "approximately 15 percent of programmed flying hours will be dedicated to local training requirements."[70] With the remaining 85 percent of programmed flying hours therefore devoted to support airlift flying, it is hard to see where local training took precedence or where only time in excess of local needs would be turned into airlift missions. It seems administrative airlift would be pilot proficiency and wartime readiness training in name but peacetime DV support airlift in actuality.

The Transition Begins. On schedule, MAC gained responsibility for CONUS administrative support airlift on 1 April 1975.[71] That same day, the formal title *Administrative Airlift* came into being to encompass the CONUS T-39A support fleet (as well as a few larger aircraft which the AAD would schedule but MAC would not command).

Slightly ahead of the implementation schedule, the Administrative Airlift Division began scheduling MAC's 11 T-39As on 10 April 1975. Throughout the next few months, the AAD assumed more of the scheduling load from the individual units. By the end of July, the AAD had complete control over 105 CONUS administrative support airlift T-39As.[72] Meanwhile, the last aircraft transferred to MAC's command on 7 July 1975. The first few months were a learning experience for everyone involved but, in short time, produced a support airlift system much more capable and efficient than the hodgepodge it replaced. Expressing his confidence, General Carlton wrote, "with prudent management (i.e., efficiently marrying requirements with capability) we can fill the travel gap left by the [retirement of] recip aircraft and still survive congressional scrutiny."[73]

Training and Airlift Hours. The first six months of operations under MAC saw much more than the planned 15 percent of programmed flying time

devoted to training flights. The 1400th MAS (plus its detachments) flew a total of 10,156 hours, of which 3,737.6 were on training and functional check flights (FCF) and 6,418.4 were on airlift missions. The high time squadron was the 1401st MAS which flew a total of 19,126.3 hours—14,776.6 airlift hours and 4,349.7 hours for training. Meanwhile, the 1402d MAS and its dets flew 15,501.2 total hours divided between 9,890.7 mission hours and 5,610.5 hours on training flights.[74] The high proportion of training to airlift hours reflected the need to provide training to a large number of newly attached pilots.

The ratio of airlift mission to training hours gradually increased during the first full year of MAC-controlled operations. By June 1976, most units were flying about 75-80 percent airlift mission hours and 20-25 percent training hours. The exception was the 1401st MAS at Scott AFB. During the first half of 1976, the T-39 Central Training Facility, along with four aircraft, moved (in TDY status) from Andrews AFB to Scott AFB. Thus, the 1401st began devoting a large percentage of its flying time to training sorties.[75]

T-39 Operations in the Late 1970s

Consolidated administrative airlift (AA) was less than a year old when it came under close scrutiny. Unfortunately, AA was caught up in a DOD-wide review of support airlift, precipitated by the Navy's request for more fleet and command support planes.[76]

The 1976 DOD Interservice Audit and the 1976 Air Force Audit Agency Report

On 13 February 1976, less than a year since MAC took over the Air Force's administrative support airlift program, the Air Force Audit Agency (AFAA) notified the Air Staff that AA was being audited as part of the "DOD Interservice Audit of Tactical/Command Support Aircraft Requirements and Utilization."[77] The audit's objective was "to review the requirements determination for tactical/command support aircraft and evaluate the assignment and utilization of these aircraft."[78]

On 4 April 1976, as part of the DOD audit, the Air Force Audit Agency issued a draft report "Effectiveness of the T-39 Consolidation." The AFAA audit's objectives were "to determine: (a) if the primary mission of providing pilot wartime readiness training was being accomplished; [and] (b) the cost effectiveness of administrative airlift missions, considering training accomplished and support airlift provided."[79]

The audit team determined that "the primary mission of providing wartime readiness training (proficiency) was being accomplished. However, the existing support airlift system and the allotted flying hours led to inefficiencies."[80] Specifically, the team said that T-39 support was rarely cost-effective and, for the evaluated month of November 1976, AA costs exceeded commercial airline prices by more than $600,000.[81]

Even the report's endorsement of the primary mission accomplishment was dimmed by several subfindings. The team concluded that T-39 flying hours exceeded training requirements and that AA missions were not conducive to training requirements.[82] Additionally, the full-time assigned pilots (13 percent of the total pilot force) flew 40 percent of the AA missions while two attached pilots flew together and received mission credit on less than 40 percent of the missions.[83]

With such statistics, it is hard to understand why the AFAA decided pilot wartime readiness training was being accomplished. However, one reason might be that AFAA personnel did not think pilots needed much flying time to remain proficient. Through an unspecified formula, the audit team determined the six T-39 units reviewed needed only 7,500 hours to complete training on the 790 attached pilots instead of the 18,000 hours authorized. The team therefore decided that the 22.8 flying hours per quarter (less than eight hours per month) were more than double the necessary flight time required for each attached pilot. With an average AA mission time of six hours, it is very difficult to believe a pilot could maintain proficiency with an average of less than one mission per month. Yet, the audit team reached such a conclusion.[84]

The audit report listed several recommendations concerning pilot training. Most importantly, the team thought the primary T-39 mission should be changed "to provide both wartime readiness training and high-priority airlift."[85] Additionally, the report said that AA missions should be flown only by pilots still requiring training and mission credit or alternatively establish maximum mission levels for pilots. Finally, the team concluded that the T-39 flying-hour program should be reduced although the report did not propose any specific level.[86]

MAC responded to the draft audit with several position papers. The AAD (also known as MAC/DOOF) took exception to most of the report's figures and conclusions.[87] Among MAC's rebuttals were that the audit failed to perceive training requirements realistically and link by-product airlift as a discounted DOD cost avoidance and that the audit report's conclusion that less than eight flying hours per month per pilot was enough was totally inadequate.[88] Unfortunately, the final audit report could not be located so how the disputes were finally resolved is unknown. However, several additional and more objective audits would follow over the next 12 years.

Growing Pains for Administrative Airlift: Support and Nonsupport

The period from April 1975 to November 1977 was one of mixed results. On one hand, centralized scheduling showed increased efficiency but, on the other hand, a lot of users abused the administrative support airlift system. Such abuses, mixed with pressure to end the Air Force's proficiency flying program, led to more changes for administrative airlift.

One major problem with the consolidated airlift system was that many users still treated the MAC T-39As as if the planes were still base assigned.

Users often made last minute changes or even cancellations well after missions were scheduled. Thus, other users were negatively affected, either by having their times changed or even losing the support altogether. With very few aircraft to support too many potential users, the T-39As were a precious commodity and airlift requests far outstripped the aircraft available.

In July 1975, MAC had received 5,164 administrative airlift requests meeting the 72 hours prior notice window. Even with less than all the CONUS T-39As under its control (some were still under their old commands until August 1975), MAC/DOOF scheduled 2,302 requests for support. However, user cancellations and no-shows, along with some MAC cancellations caused by the user changes, further reduced the actual support to 1,910 requests. Thus, MAC supported just 36.99 percent of the original requests partially due to a large last minute cancel/no-show rate of 17.03 percent.[89]

The support rate improved slightly in August 1975, the first month with all scheduling under MAC/DOOF. Reflecting the broader user base, available requests jumped from July's numbers by nearly 1,400 to a total of 6,551. Of that total, MAC scheduled 3,210 but nearly 600 canceled or no-showed leaving just 2,611 supported airlift requests. Thus, the support rate was up to 39.86 percent but the cancel/no-show rate was also up slightly at 18.66 percent.[90]

By 1977 requests had increased dramatically but, with no more aircraft to fill the needs, the support rate only slightly improved despite MAC/DOOF's best efforts. In calendar year (CY) 1977, MAC received almost 110,000 T-39A airlift requests (more than 9,000 a month) and supported slightly over 45,000 for a 41 percent support rate. More than 120,000 passengers flew on airlifts 35,556 sorties, thus using about 3.5 seats per mission. Unfortunately, more than 15,000 passengers canceled late or did not show up—still over 10 percent of the original requests.[91] These numbers do not include numerous instances where support was provided but mission schedules were altered at the last minute thereby inconveniencing other passengers, aircrew, and support personnel. MAC tried to get users and validators to play by the rules with their requests. However, there was no effective enforcement mechanism in place to force users to abide by the regulations. In addition, the number of validators grew from 77 in September 1975 to about 100 in 1977.[92] This 30 percent increase meant more requests, more cancellations, and put a greater premium on effective communication between MAC/DOOF, the validators and users, and the flying units.

One way MAC sought to be more responsive to late requests was to open a new section within DOOF on 4 April 1977 to take airlift requests as late as 2000Z the day before scheduled missions. Users still used their validators who called MAC for the first-come, first-served reservations. In general, previously scheduled times and routes were not altered to accommodate such late requests.[93]

Proficiency Flying Ends

For many years, Congress questioned the need and usefulness of the services' proficiency flying program. During the early 1970s, the Senate Appro-

priations Committee in particular argued that proficiency flying showed no payoff in increased combat readiness or reduced training requirements during weapons system requalification. Bowing to such pressure, the Army dropped its proficiency flying program in 1975 and the Navy followed suit in 1976. The Air Force held on in 1977 but, reading the writing on the wall, the Air Force removed money for the program in the FY 1978 budget. Therefore, on 12 July 1977, the Air Force announced termination of the Air Force flying proficiency program effective 1 October 1977.[94]

Anticipating proficiency flying's fate, MAC acted to increase the T-39A crew ratio from 0.5 to 1.25. Without proficiency pilots to fly the administrative airlift missions, MAC needed more full-time pilots to man the T-39A force. Unfortunately, AF/PR repeatedly denied MAC's requests, citing higher UPT production and absorption rates which were fiscally unjustifiable. Instead, AF/PRM offered a counterproposal whereby the T-39A proficiency pilots would be replaced with augmentors drawn from staff pilots and former proficiency pilots at the beddown bases.[95]

The secretary of the Air Force (SECAF) approved the AF/PRM proposal by issuing a "Determination and Findings," effectively ending the support airlift mix of operational and proficiency flyers. Henceforth, remaining T-39A flyers would become augmentor pilots and receive full operational flying ("gate") credit. Additionally, the secretary said such flying duty would be "limited to the minimum number of augmentors necessary to accomplish the T-39 operational support airlift flying mission."[96] Supporting the SECAF's decision, AF/XO and AF/XOO issued letters in September 1977 establishing "the maximum number of attached pilots based upon each detachment's programmed flying hours."[97] Overall, the changes dropped the CT-39A pilot force from 1,200 down to 900, including the 110 full-time pilot cadre authorizations.[98] Importantly, flying hours would now drive manning instead of vice versa.

With the transformation in pilot force composition and the resulting shift from pilot support to administrative airlift support, the Air Force redesignated the T-39A as the CT-39A to reflect the momentous changes.[99] The "C" designation for cargo aircraft squarely put the Sabreliner in the airlift category while retaining the "T" prefix reflected the continuing training opportunities for the augmentor pilots. However, administrative airlift's overhaul was not yet complete.

Air Force Regulation 60-23

Coincident with the CT-39 designation, the Air Force issued AFR 60-23, *Operational Support Aircraft Management,* 21 October 1977. The new regulation listed several significant items affecting OSA including Headquarters USAF, MAC, and other MAJCOM responsibilities, airlift request and scheduling procedures and restrictions, and a slightly revised (from 1975) 12-tier priority system.

More significantly, AFR 60-23 designated the flying activity code "ZB" for the CT-39A (and a few larger, team travel planes). The new ZB code covered "aircraft assigned to perform the operational support airlift mission."[100] In turn, for the first time, the regulation defined the term *Operational Support Airlift Mission:* "Air Force-directed mission(s) flown during peacetime, contingencies, and wartime. These missions include the priority movement of personnel and cargo with time, place, or mission-sensitive requirements."[101] Thus, AFR 60-23 clearly stated OSA's need to support requirements in contingency and wartime situations, not just peacetime.

Unfortunately, simply stating the wartime support requirements did not make such capabilities a reality. Since the crew ratio remained at just 0.5 full-time pilots per aircraft, the CT-39 force still demanded attached pilots holding staff positions to fly most of the OSA missions. These pilots would not be available during a wartime scenario so full OSA wartime support would not be available.

As 1977 drew to a close, OSA and the CT-39A fleet completed a major transition in mission, pilot force, and overall purpose. At least on paper, airlift support, not pilot support, was now the CT-39A's primary mission. However, the OSA fleet still depended heavily on attached pilot support, even if those pilots were flying for force augmentation purposes instead of for their own proficiency. More manning issues, flying-hour reductions, and unit closure proposals awaited OSA in 1978.

1978: Another Year of Transition

After the turbulent changes of 1977, OSA probably deserved a period of stability but such was not the case. Three major proposals affecting OSA's CT-39A fleet surfaced in 1978, of which one was approved, one was not, and the third laid the foundation for changes several years down the road.

The 1978 Consolidation Proposal. The FY 1978 budget cut CT-39A flying by 6,813 hours to 92,366 total hours.[102] These figures equated to a cut in hours per month per aircraft from 89 in FY 1977 to 74 in FY 1978.[103] Such reductions meant commensurate cuts in host base maintenance support. The logistics planners felt it would be difficult for the smaller units (four and five planes) to meet the generation and maintenance requirements so the planners began promoting the idea of consolidating the CONUS CT-39As at fewer bases, preferably with a minimum of 10 aircraft at each remaining base.[104]

In late 1977, Headquarters MAC/XPPP issued a comprehensive "CT-39 Beddown Study." The study assumed: (1) 10 aircraft minimum at each base, (2) relocating CT-39As would only go to other CT-39A locations (to minimize beddown costs), and (3) one unit would remain on the West Coast to provide geographic support. Planners reviewed historical data from January through June 1977 looking at OSA geographical airlift requirements distribution, seat utilization, and productive home-station departures. The investigation offered three options but recommended Option 3—closing six sites and redistributing

the aircraft to the remaining nine locations. Specifically, the study suggested closing units at McClellan, Kirtland, Bergstrom, Barksdale, Maxwell, and Shaw. Despite being number four in total Priority 1-3 requests, Maxwell's unit faced closure based on the base's limited operating hours and availability of coverage from Eglin. Meanwhile, Norton had slightly fewer requests than McClellan, but Norton had the Queen Bee maintenance facility for West Coast CT-39As and served Los Angeles Air Force Station (AFS) and March AFB. Thus, the study recommended retaining Norton over McClellan.[105]

Sometime in late 1977, MAC forwarded the study to Headquarters USAF. After reviewing the investigation, Headquarters USAF/PRPO asked MAC to provide statistical evidence showing the effect of the proposed consolidation on "deadhead time" [positioning and depositioning legs flown without the primary supported party] and whether consolidation would improve MAC's airlift support capability. In response, MAC/DOOF ran a three-week study simulating the nine-base option versus the actual 15-base operations. Interestingly, the examination revealed consolidation would actually cause a decrease in nonproductive deadhead time from 28.3 to 20.1 percent and enable an average daily increase of 11.9 passengers flown.[106] Thus, MAC argued for the consolidation.

However, the MAJCOMs who stood to lose CT-39A units at their bases were not enthralled with the consolidation proposal. In particular, Headquarters SAC objected to losing Barksdale, while the Air Force Technical Evaluation Center (AFTEC) commander not only protested against giving up his support at Kirtland, he even argued for more aircraft.[107] In addition, SAC and TAC said they could maintain their detachments without additional manpower support while Air University stated a requirement for five more manpower slots to stay in business.[108]

After encountering such strong opposition to consolidation, MAC/XP proposed an alternative whereby all 15 units could be retained provided Headquarters USAF came up with an additional 10 maintenance manpower authorizations. After considering the pros and cons, Headquarters USAF decided against the consolidation proposal and accepted MAC/XP's proposal for the additional manpower slots.[109] It would be 15 more years until any major CONUS OSA consolidation would occur.

Unfortunately, all of the discussion concerning consolidation was based on peacetime CONUS support and support to general officers. Lost in all the debate was OSA's wartime support requirement. Deployability of small versus large detachments, command and control, and contingency training opportunities were not mentioned. The reason is simple—nobody cared. With the low 0.5 crew ratio and total lack of realistic training, most knowledgeable people knew the CT-39 was not going to deploy to any contingency.

However, one hurdle hindering such a capability, split command and control, was overcome in 1978. For although unit consolidation was not allowed, consolidation of CONUS CT-39A command and control was approved.

Command and Control Consolidation. Back in November 1977, Wisconsin Senator William Proxmire awarded his famous "Golden Fleece of the Month" to the civilian and "military brass." Senator Proxmire felt senior officials had "systematically misused military planes for low-priority missions—support and personal flights—instead of for combat training and for flights where available commercial transportation was many times cheaper."[110] In particular, the senator was referring to the large number of support aircraft stationed at Andrews AFB under the 89th Military Airlift Group (MAG). One way to reduce unwanted congressional interest and visibility was to transfer some of the 89th MAG's assets to other units. OSA was an ideal function and, since operational control was already performed from Scott AFB, the 375th AAW was the logical choice to gain command.[111]

Therefore, on 15 March 1978, MAC transferred command of CONUS CT-39As from the 89th MAG to the 375th AAW. With this move, wing-level command and management, headquarters-level operational control (through MAC/DOOF), and the CT-39A central training facility (made permanent at Scott on 1 April 1978) were finally collocated.[112] Such action greatly simplified command and control, as well as communications and responsiveness. However, the wartime readiness and training issues were still not mentioned. What was concerning MAC and 375th planners was the CT-39A's age.

CT-39A Replacement: The Opening Shots. MAC planners recognized the CT-39A's useful lifetime would necessitate a replacement aircraft in the mid-1980s, even with the reduced flying-hour authorizations. On 8 March 1978, MAC/XP released a general operational requirement (GOR) for a CT-39A replacement aircraft. The concept envisioned approximately 120 turbofan or turboprop aircraft, acquired basically off-the-shelf from a commercial aircraft company, with a 20-year/20,000-hour useful service life. Also noteworthy was the desire to keep maintenance simple and flexible to allow for a small, austere maintenance force and operations in a wide variety of environments.[113]

The MAC Council approved the GOR on 15 June 1978 and, with MAJCOM support, forwarded it to Headquarters USAF as a joint MAC/TAC/USAFE/PACAF proposal. Headquarters USAF planners spent the next eight months turning the GOR into a mission element needs statement (MENS). The Air Staff sent the draft MENS for CT-39A replacement back out to the MAJCOMs on 21 February 1979.[114] Thus, the road to replacing the CT-39 was underway. However, the road would prove long and bumpy and entail other changes to the OSA structure.

1979: Fewer Hours—Less Service

As the 1970s drew to a close, CT-39A OSA found itself heading downhill fast. Flying hours, passengers, and requests supported were falling sharply. Table 14 shows the figures for CONUS hours and support from 1977 through 1979 (sortie figures for 1979 were not available).

Table 14

CT-39A CONUS OSA Hours and Support, 1977-1979

Category	1977	1978	1979	Change 1977–1979
Duty Pax Moved	121,514	91,857	85,211	–36,303
Duty Pax Submitted	247,828	198,866	183,347	–64,481
Percent Duty Pax Supported	49	46.2	46.5	–1.5
Requests Submitted	109,828	111,688	101,388	–8,440
Percent Requests Supported	41	39	39.5	–1.5
Pax Sorties	35,556	33,270	N/A	N/A
Flying Hours—Programmed	106,000	92,366	83,000	–23,000
Flying Hours—Actual	99,179	90,472	80,795	–18,384

Note: Passengers (Pax) moved does not include space available passengers.

Source: *Military Airlift Command (MAC) History: 1 January-31 December 1977* (U), 122; *MAC History: 1 January-31 December 1978* (U), 114-15; and *MAC History: 1 January-31 December 1979* (U), 170. (Secret) Information extracted is unclassified.

As table 14 shows, between 1977 and 1979 CT-39 OSA flew nearly 30 percent fewer passengers with about 28.4 percent fewer flying hours, nearly an even correlation. The fact that support percentages flew only slightly less was due to the dramatic fall in requests submitted. No doubt that drop was due to many lower priority travelers deciding not to bother requesting support knowing that they were not likely to get it. If you were not a general officer, chances of getting CT-39A support were slim at best.

The future did not bode well either. CONUS flying hours programmed for FY 1980 were just 68,000, down 15,000 from the previous year and 38,000 less than in FY 1977.[115] At the rate things were going, CT-39A OSA would soon be reduced to a limited air taxi service for only very senior Air Force general officers.

One other significant event for OSA occurred in 1979. In Europe, USAFE transferred its six CT-39As and two C-12As to MAC giving MAC a total of 110 assigned CT-39As. MAC's 435th Tactical Airlift Wing (TAW) at Rhein-Main AB, Germany, assumed command with operational control exercised by the 435th TAW's parent airlift division (ALD), the 322d ALD at Ramstein AB.[116] This made good sense since the aircraft were based at Ramstein along with other OSA-type aircraft including five C-140 Jetstars in a large OSA squadron, the 58th MAS.[117] With Headquarters USAFE as its primary customer, the 322d ALD exercised operational control over the European OSA assets much like MAC/DOOF did for CONUS OSA.

However, in the Pacific, PACAF retained both command and control of its OSA CT-39As. PACAF probably figured the wide geographical dispersal of its OSA assets did not lend itself to centralized command and control. So, each numbered Air Force kept their own small number of CT-39As. Despite eventually relinquishing command of OSA assets to MAC in the mid-1980s, PACAF stubbornly clung to retaining its fragmented numbered Air Force

operational control despite proposals to centralize operational control under a MAC or PACAF unit similar to MAC/DOOF.

A CT-39A Belonging to MAC's 58th Military Airlift Squadron, Ramstein Air Base, West Germany

The Early 1980s: Plans for New Planes

The early 1980s saw the CT-39As' demise as OSA's primary airlift asset. The planes were reaching the end of their useful lifetime and only major overhaul and modifications could extend their service life. Therefore, the Air Force decided to acquire new OSA aircraft. But before the CT-39As could be replaced, OSA faced several other important issues.

1980: Pilot Force Changes and More Flying-Hour Reductions

Early in 1980 the issue of the CT-39A's crew ratio resurfaced. For several reasons including the C-141's airdrop expansion program, MAC needed more rated personnel. However, simply increasing the number of undergraduate pilot training (UPT) graduates was not enough. The young pilots required *aging*, that is, given flying experience. For several reasons including lack of available flying hours, the C-141 force could not accept any significant increase in UPT graduates. So, MAC planners looked for other ways to accept more young pilots and still give them flight experience. The answer was the CT-39A.[118]

Crew Ratio Increases. The CT-39A pilot augmentor program, introduced in 1977 when proficiency flying ended, was becoming more difficult to manage. Attached pilots found their supervisors reluctant to let them fly as often as needed to support the airlift schedule. Meanwhile, rated prioritization changes to staff positions reduced the numbers of attached pilots eligible to fly the OSA missions.

In April 1980, Gen Robert E. Huyser, the CINCMAC, proposed increasing the CT-39A's crew ratio from 0.5 up to 1.13 by the end of FY 1984. He felt such a change would improve scheduling flexibility (by primarily using full-time pilots on the OSA missions) and enable MAC and the Air Force to accept more UPT graduates. More importantly, General Huyser understood that, from a readiness standpoint, more than doubling the crew ratio would also better meet OSA's wartime support capabilities.[119] Limiting reliance on attached staff pilots would improve the CT-39A's ability to deploy with enough dedicated pilots to meet contingency flying needs.

In a letter to the USAF/XOO, Maj Gen James I. Baginski, the MAC/DO, laid the crew ratio issue out in strong language. He said the costs associated with the higher crew ratio were small compared to overmanning the more expensive major weapons systems in MAC. General Baginski concluded, "due to the current and projected pilot shortage, we cannot sustain the operation of the CT-39 without a dedicated crew force."[120]

A few months later, the Air Staff approved the proposed crew ratio change. Plans called for accepting 60 UPT graduates per year by 1984 with the overall pilot force eventually containing 224 primary pilots and just 33 attached staff augmentors. After a typical three-year CT-39A tour for the UPT graduates, MAC planners envisioned about 75 percent of the now aged young pilots to proceed into another MAC aircraft assignment, preferably a major weapons system (C-130, C-141, or C-5). Though first instituted as a primary role for OSA in 1980, pilot aging continues as an important purpose for OSA today.

More Flying-Hour Cuts. During the congressional budget discussions in the spring of 1980, the House Appropriations Committee (HAC) considered a proposal to slash the CT-39A fleet by 50 percent. MAC was quick to defend the fleet size and flying-hour program. On 7 May 1980, Lt Gen Thomas M. Ryan, vice CINCMAC, testified before the HAC by detailing MAC's opposition to the proposed cuts. General Ryan felt such reductions would diminish MAC's readiness posture and significantly increase pilot training costs. To maintain pilot proficiency in a C-130E cost MAC and the Air Force three times more than for a pilot in a CT-39A. The numbers were even worse for the bigger jets with C-141 proficiency being five times higher than a CT-39A and the C-5 a whopping 17 times more expensive than the OSA plane. Aging was certainly much cheaper in the CT-39 than in the major weapons system aircraft.[121]

General Ryan's testimony apparently carried the day as Congress did not cut the CT-39A fleet. However, the Air Staff did slice the CT-39A's FY 1981 CONUS flying-hour program by another 14,000 hours down to 54,215. At such a low level MAC could neither provide adequate OSA support to the

other MAJCOMs nor sufficiently age its young pilots. With no easy recourse, MAC decided to take funds from other programs, most notably the formal training program, to allow the CT-39As to maintain their FY 1980 CONUS flying hour program of 68,215 hours.[122]

Fewer Hours—Less Support. Meanwhile, the 15,000 hours cut from FY 1979 to FY 1980 caused OSA support figures to continue their decline. In 1980 the CT-39As carried just 74,217 duty passengers out of 159,123 passengers submitted for a support rate of 46.6 percent. Thus, CT-39As moved nearly 11,000 less duty passengers in 1980 than in 1979 (about 47,000 less than in 1977). Submitted requests in 1980 fell to 87,386 with 39.7 supported. CT-39As also carried 15,280 space available passengers.[123]

Passengers in the top three priority levels (including general officers) still received support in most cases but those numbers were down to 92 percent from the historic 97 percent level. Meanwhile, CT-39A requests for travelers in priority levels 4 through 12 were, on the average, supported just 25 percent of the time, down from 32 percent historically.[124] Obviously, support percentages remained fairly consistent only because potential users (knowing they were rarely supported), especially those with requests in the lower priority levels, submitted fewer requests.

1981: Operational Support Airlift Gets a Governing Directive

In 1981 OSA came under more scrutiny when DOD issued a governing directive to all the military services. In addition, the airframe replacement issue picked up pace with one proposal to combine CT-39A and C-140 replacement and another suggestion to join in on the acquisition of SAC's companion trainer aircraft (CTA) and ATC's tanker, transport, bomber (TTB) trainer. Meanwhile, wartime readiness issues affecting MAC resources seemed to bypass the small aircraft OSA fleet.

Department of Defense Directive 4500.43. Faced with continued controversy over the services' OSA resources, the DOD issued directive guidance covering OSA operations for all military services. Released on 13 February 1981, DOD Directive 4500.43, *Operational Support Airlift (OSA),* stated the DOD's policy on service OSA resources. One of the directive's stated purposes was to provide "DOD components with an organic capability to satisfy air transportation requirements in support of command, installation, or management functions."[125] For the first time, OSA had overarching DOD-level guidance.

Stating policy guidance which still applies today, DOD Directive 4500.43 clearly stated OSA's primary reason for existence in the first sentence: "The inventory of OSA aircraft shall be based upon wartime readiness requirements."[126] At the bottom of the same policy paragraph, the DOD delineated OSA's corollary role: "These aircraft resources shall be used in peacetime to provide essential training for operational personnel and for logistic needs to ensure military effectiveness in support of national defense policies."[127] This rather vague language actually defines OSA's daily operations. Since 1980

Air Force has used pilot aging as the major justification for meeting the directive's essential training provision. Meanwhile, logistic needs has mostly meant flying senior Air Force military and civilian officials throughout the CONUS and within the overseas theaters to meet their official travel needs.

Enclosure 3 to DOD Directive 4500.43 further emphasized OSA's wartime basis:

> OSA aircraft shall be assigned and managed in peacetime to ensure readiness to satisfy wartime requirements. Major commands . . . may reassign them within geographic area of responsibility, as necessary, to improve efficiency of peacetime utilization, insofar as that reassignment does not reduce their ability to satisfy wartime requirements.[128]

Thus, the DOD saw OSA's secondary (peacetime) role as supporting the primary (wartime) mission. However, the Air Force has virtually ignored the wartime mission requirements in order to maximize the peacetime support. This paper's classified annex discusses in more detail OSA's wartime readiness requirements.

DOD Directive 4500.43 made one other major change to daily OSA operations. The directive replaced the cumbersome 12-level passenger priority system with a DOD-wide uniform priority system containing only five levels as follows:

> *Priority 1.* Emergency airlift in direct support of operational forces or for lifesaving purposes.
>
> *Priority 2.* Official business airlift of personnel or cargo with scheduling or delivery constraints that cannot be satisfied by any other mode of travel.
>
> *Priority 3.* Other official business airlift of passengers or cargo that requires the carrying of classified material for mission accomplishment that cannot be accommodated by mail or the Armed Forces Courier Services.
>
> *Priority 4.* Official business airlift involving group or team travel that requires the conduct of official business while en route, that maintains the integrity or cohesiveness of the group, and that cannot be reasonable satisfied by other modes of travel.
>
> *Priority 5.* Any other official business airlift that can be shown to be less expensive than any other mode of travel to satisfy scheduling or delivery constraints. Request for OSA under this priority shall be supported only when cost effective.[129]

In reducing the number of levels and changing who belonged in each level, the DOD made several sweeping alterations to business as usual. For one, no longer would rank or grade alone be sufficient to justify OSA support.[130] General officers who were used to receiving more than 90 percent support under the old system would now, in theory, compete for support under Priority 2 or even Priority 5 (and therefore have to show cost justification). In actuality, nearly all general officer support has fallen under Priority 2 travel. Additionally, Priorities 1 and 3 are rarely used at all, and Priority 4 (team travel) is seldom used for the small OSA aircraft.

Another change for OSA was increasing the minimum lead time for submitting requests from two to three days (except Priority 1) to reduce scheduling turbulence and increase efficiency. Also, the directive included specific criteria

for determining cost effectiveness for the Priority 5 requests. Finally, the directive emphasized that the airlift was "a by-product of essential readiness training" and encouraged carrying cargo and space-available passengers.[131]

Air Force Regulation 60-23 Revised. The Air Staff responded to DOD Directive 4500.43 by tasking MAC to revise AFR 60-23.[132] MAC/DOOF quickly drafted up the revision adhering to the DOD directive's guidance and began staffing the new regulation within MAC on 30 March 1981.[133] Nearly six months later on 24 September 1981, the Air Force finally released the revised AFR 60-23. Significantly, although the new regulation applied "to all Air Force activities," it really dealt only with CONUS OSA assets and how MAC was to exercise operational control within the United States.[134] PACAF was not mentioned but the regulation certainly implied that PACAF was to adhere to the applicable guidance within AFR 60-23 and DOD Directive 4500.43.

CT-39A Replacement Options. While nearly everyone agreed that the CT-39A was nearing the end of its service life and was also extremely fuel inefficient, there were different ideas about how to remedy the problem. In February 1981, the MAC DCS Plans, Brig Gen Donald D. Brown, outlined three options. First, MAC could extend the plane's useful lifetime by repairing and replacing structural components and rigid aircraft management. However, such an option would be very costly and only put off the replacement problem into the near future. Second, MAC could totally overhaul the CT-39As with new fuselages, wings, and fuel efficient engines. Still, such an option was even more costly than the first and only put off the inevitable aircraft replacement a bit further. The third, and in General Brown's opinion, the best option, was to replace the CT-39A with a new aircraft. Such a new plane would be modern and commercially available with the potential to save 95 million gallons of fuel by 1991 and nearly one billion dollars in costs by FY 2000.[135]

MAC/XPQA (Aircraft Acquisition Branch) planners went to work on the third option developing a statement of need (SON) using the MAC GOR 405-78 (*GOR for Operational Support Aircraft*) and mission element need analysis (MENA) they issued in June 1978.[136] The MENA called for a twin-turbofan aircraft capable of carrying six–eight passengers and baggage over a 2,000 NM range and operating to/from runways as short as 5,000 feet. If a mixed force was desired, the jet could be supplemented by a twin turboprop aircraft with eight–10 passenger capacity, 1,500 NM range, and capable of operating to/from 3,000 feet long runways.[137]

Unfortunately, for awhile CT-39A replacement got caught up in other aircraft replacement programs. In January 1981, the Air Staff (Headquarters USAF/RDQ) recommended that the replacement program for the special air mission (SAM) C-140Bs be combined with the CT-39A program to allow one new aircraft to fulfill both replacement needs.[138] However, after reviewing the missions and lack of commonality, USAF/RDQ realized its initial decision was in error and therefore split the two OSA and SAM programs in the FY 1983 budget.[139]

Meanwhile, a House Armed Services Committee (HASC) strongly suggested that DOD procure a common aircraft to satisfy SAC's CTA, ATC's TTB, and MAC's OSA requirements. MAC studied the CTA specifications and, with some modifications, agreed it could live with the CTA airframe. However, time was running out for the CT-39As so MAC reiterated the need to get new airframes on line beginning in FY 1985, thus requiring an available, off-the-shelf commercial aircraft which might not meet SAC's CTA requirements.[140] It is not clear what happened to this common procurement option but it was dropped and CT-39A replacement proceeded on its own.

Faced with a lack of congressional funding for the CT-39A replacement, MAC began exploring another solution. Rather than purchase new aircraft, planners investigated the possibilities of leasing the necessary planes from private contractors. Such a solution would avoid the large up-front costs associated with an outright purchase. By the end of 1981, MAC had acquired enough data on potential leaseable aircraft to plan an intercommand meeting for early 1982 inviting representatives from ATC, AFCC, and Air Force Systems Command (AFSC).[141]

Manning, Flying Hours, and Support. The Air Force Military Personnel Center (AFMPC) asked MAC to accept 78 UPT graduates to the CT-39A program in FY 1982. However, MAC was willing to take only 45 UPTs. Meanwhile, Maj Gen John T. Chain, Jr., Headquarters USAF director of Operations and Readiness, told MAC that all first assignment CT-39A pilots would not be guaranteed follow-on assignments to MAC major weapons systems or to any other cockpit assignment. Instead, they would have to compete on an AFMPC selection board for a flying assignment or face a staff tour because of the expected oversupply of UPT graduates.[142] Such news was no doubt demoralizing to the younger CT-39A pilots and a deterrent to any UPT student contemplating a CT-39A assignment following graduation.

Meanwhile, at the beginning of 1981, MAC faced yet another attempt to cut the CT-39A's flying-hour program for FY 1981. In its Decision Package Set 016, OSD cut CT-39A CONUS flying hours for the remainder of FY 1981 by 14,000 hours and by 15,000 hours in FY 1982. General Baginski, MAC DCS for Operations, told the Air Staff that MAC could not meet OSA mission requirements if the flying hours were cut. In no uncertain terms, Lt Gen Charles C. Blanton, Headquarters USAF DCS for Programs and Resources, told General Baginski that MAC should still meet its requirements despite the flying hour reductions.[143] One way General Baginski offered to help the situation was to reduce general officer flying. The required instructor pilots (IP) were not available to support the generals (general officers required an IP in the other pilot position), and UPT graduates required 40 hours per month to sustain experience levels and ensure the young pilots gained sufficient hours to transition into other MAC aircraft after completion of their CT-39A tour.[144] It is unclear how many general officers were actively flying the CT-39A or whether General Baginski's idea came to fruition. However, as recently as April 1993, more than 50 general officers were still on OSA flying status.

In March 1981, the CINCMAC weighed into the flying-hour dilemma. General Huyser sent a strong message to the Air Force vice chief of staff explaining the importance of maintaining the CT-39A flying-hour program at the FY 1980 level. General Huyser cited the pilot aging rationale as well as the peacetime airlift by-product in his justification. He also proposed a solution for the funding shortfall.[145] As it turned out, MAC just took flying training hours from other MAC aircraft to make up the 14,000 hour difference.[146]

Still, the support CONUS MAC CT-39As provided continued to decline in 1981. Duty passengers moved fell to 72,067, more than 2,000 fewer than in 1980. Passengers submitted dropped more than 12,000 to 146,762 for a 49 percent support rate—slightly higher than in previous years but mostly a reflection of the drop in submissions. Overall requests of 61,322 were less than 75 percent of the previous year's figures for a support rate of 42 percent.[147] Still, support for Priority 3s (general officers) held at just over 90 percent while levels 4-12 were supported less than 30 percent of the time (the new five level priority system did not take effect until the end of FY 1981).[148]

As 1981 drew to a close, a few OSA aircraft transferred to new bases and commands. The three CT-39As supporting EUCOM at Stuttgart, Germany, transferred to MAC and came under the 322d ALD at Ramstein AB.[149] Although now commanded by MAC, EUCOM actually retained operational control of the daily scheduling. Meanwhile, two C-12As used for SAM support and military attaché training by the 89th MAW went to Europe—one to USAFE and one to the 58th MAS at Ramstein AB—giving MAC three C-12As under the 322d ALD. In addition, MAC transferred four CT-39As to the Air National Guard at Andrews AFB, Maryland. The four planes had been used as backup aircraft inventory (BAI) aircraft for the MAC fleet. So, MAC ended 1981 with 104 CT-39As (100 operational and four in the central training facility [CTF]) in the CONUS OSA fleet and nine CT-39As and three OSA/SAM C-12As in Europe.[150] Meanwhile, PACAF still owned eight CT-39As in the Pacific, exercising full command and control.

1982: The Replacement Issue Heats Up

The CT-39A replacement controversy dominated OSA in 1982 but the yearly battle over flying hours still took place as usual. From a high-level meeting in January, to Cessna's unsolicited proposal in August, to yet another OSA audit in December 1982 was a year filled with unique ideas. Some of the new concepts would eventually be selected, albeit in slightly different forms.

CT-39A Replacement: Lease Proposals and Wartime Requirements. By the beginning of 1982, MAC stood squarely behind the notion of replacing the CT-39A with a completely new aircraft rather than attempting to repair, refurbish, or extend the life of the Sabreliner. Already, safety considerations caused by age and wear had forced MAC to restrict some CT-39As to carrying a maximum of four passengers. In nearly all of the Sabreliners, mechanics dealt with extensive corrosion. At the rate things were going, almost half of

the fleet would be unsafe to operate by 1985 without major, costly modifications and overhaul.[151] Somebody needed to make a decision and soon.

Only 12 days into the new year, representatives from MAC, AFSC, AFLC, and others met as the Support Airlift Requirements Steering Group (SARSG). The 12 January meeting was called to develop a congruous plan for CT-39A replacement which could satisfy both OSA and trainer requirements. The group reached the consensus that a new aircraft was the proper way to proceed.[152]

On 15 January 1982, Brig Gen Elbert E. Harbour, deputy for Airlift and Trainer Systems at AFSC's Aeronautical Systems Division (ASD), Wright-Patterson AFB, Ohio, briefed the CINCMAC, General Allen, on the SARSG's conclusions and recommendations. General Harbour concluded his presentation by announcing ASD agreed with MAC that a new OSA plane was needed and should be procured quickly. General Allen agreed with most of the briefing's conclusions but tasked MAC OSA planners to get with their ASD counterparts and search out the advantages and disadvantages of replacing the CT-39As with a mixed fleet of turbofan and turboprop aircraft versus a turbofan only fleet. MAC planners wanted an all turbofan OSA fleet while USAFE officials requested a turboprop, mainly for their shortfield capabilities. General Allen wanted both options explored from the operational and cost standpoints so MAC and ASD planners went back to work.[153]

About two months later, the vice CINCUSAFE, Lt Gen Robert W. Bazley, sent the vice CINCMAC, Lt Gen Robert F. Coverdale, a message explaining USAFE's position on CT-39A replacement. For the first time, a senior officer stood up for OSA's wartime role and the type of aircraft required to carryout the mission.

In his 16 March 1982 message, Lieutenant General Bazley expressed his "greater concern" over the "viability of the current [OSA] fleet in the expected wartime environment."[154] The general continued, "it appears a capability to operate from short, semi-improved runways will be essential to carry out the wartime support airlift mission." To meet USAFE's requirement, the general asked for 12 turboprop planes capable of carrying seven to 11 passengers or 2,100 pounds of payload on a 500 NM leg at 285 knots true airspeed at a minimum altitude of 28,000 feet. More importantly, the plane needed a critical field length of just 3,000 feet (1,200 pounds payload over 500 NM range) for takeoff.[155] He justified the need for the turboprop by saying:

> Central Europe and the UK [United Kingdom] have hundreds of small, semi-improved airfields which can be used in lieu of primary bases temporarily not available. In addition, shortfield capabilities could enhance the utility of major bases which may be able to sustain shortfield operations during periods when the entire runway is not available.[156]

General Bazley also argued for the CT-39A replacement to have an inertial navigation system (INS) built into the aircraft. He said, "INS in the OSA is vital to wartime employment in central Europe, where loss of ground NAVAIDs [Navigation Aids] is likely."[157] The general also mentioned the need for INS on missions to central Africa.[158] However, an internal INS (or today's

GPS [global positioning system]) would be required anywhere in the world where NAVAIDs were not available, especially during wartime where they could be destroyed in combat or even turned off by the friendly side to deny navigation information to the enemy. Today's OSA aircraft do not have this built-in navigation capability.

The vice CINCUSAFE concluded his message by proposing other measures to counter threats in peacetime as well as wartime:

> The present and anticipated terrorist and wartime employment threats dictate that new aircraft, as well as the current fleet, be equipped with some counter-measures capability. The addition of IR [infrared] paint, IR suppressers, [on the engines] radar warning receivers, and chaff/flare dispensers should be evaluated against impact on payload/range/cost. Camouflage paint schemes and markings of replacement OSA . . . are needed to provide protection against potential terrorist and wartime threats while satisfying peacetime requirements. In addition, the increasing ranges of the wartime aerial threat requires re-evaluation of the OSA employment concept. Previously, the accepted concept envisioned a permissive air environment. This is no longer a valid assumption. The necessity to operate low-level must now be considered likely. Thus, appropriate camouflage for OSA will be important.[159]

General Bazley's comments were a historic recognition of OSA's wartime roles and requirements. For one, the need for an OSA plane to be capable of operating from the short, austere airfields typically found in a combat environment seems obvious to any student of modern warfare but was apparently lost on MAC and Air Force planners and even senior officers. Camouflaging OSA aircraft was another idea apparently too farsighted for the Air Force leadership. Perhaps the decision makers were more concerned about having DVs arrive in a gleaming silver and white jet instead of an olive drab, utilitarian-looking aircraft. Also, the general's recognition that enemy air defenses and aircraft were (and are) a very real threat to OSA planes was profound. One only needs to hearken back to World War II and the interception of Japanese Admiral Yamamoto to understand the need for aircraft self-preservation measures and proper aircrew training. Unfortunately, with the exception of the request for turboprop aircraft, the vice CINCUSAFE's requests were virtually ignored. However, the needs are as valid today as they were in 1982, perhaps more so considering the terrorist threats and austere operating areas in Somalia and elsewhere around the world.

In his message reply, the vice CINCMAC, Lt Gen Robert F. Coverdale, only acknowledged that "a mixed fleet of turbofan and turboprop aircraft is an option to satisfy the OSA mission" and that the SON identified turboprop specifications.[160] The message did not even recognize any of General Bazley's requests for camouflage or defensive systems/capabilities.[161] In short, MAC failed to address the clear fact that OSA's wartime mission required an aircraft capable of operating in a wartime environment.

On 24 March 1982, MAC planners briefed the CINCMAC on the CT-39A replacement program, in particular on the pros and cons of a turbofan versus turboprop aircraft. Brushing aside USAFE's requirements and desires, the briefers contended that the CONUS requirements took precedence over USAFE's needs. Plans called for more than 100 of the new planes to be

stationed in the US with only 15 to 20 destined for peacetime deployment in Europe. General Allen went along with the planner's recommendations to back the turbofan-only option but the general also said MAC would not oppose a mixed fleet solution (turbofans for the CONUS and turboprops for Europe). Therefore, he directed planners to include the mixed fleet option in a revised statement of operational need. General Allen then informed the Air Staff of his decisions and recommended purchase of 120 new OSA aircraft including approximately 20 turboprop planes.[162] No record could be found of how PACAF felt on the subject of aircraft type, nor did MAC's 120 total aircraft purchase recommendation apparently contain any planes specifically earmarked for PACAF to replace that command's half-dozen CT-39As.

The next six months saw the replacement program come to a standstill while Congress debated approval and funding. Then, in early August 1982, the issue took a unusual turn which, in the long run, would alter the entire replacement strategy.

Knowing the service was keenly interested in replacing the CT-39As, Cessna Aircraft Corporation sent the Air Force an unsolicited proposal to replace all the old Sabreliners with new Cessna Citation IIs. Even more unique was that Cessna wanted to lease the Citations to the Air Force on a multiyear, lease/purchase contract instead of selling them outright. Cessna offered to deliver more than 100 new planes within 18 months, train the aircrews, and provide maintenance at the bases where the Sabreliners were then stationed, all for less money than was currently being spent on CT-39A operations and maintenance costs. MAC legal and acquisition officials quickly went to work examining the proposal's legality.[163]

On 17 August 1982, MAC planners told General Allen that the Air Force could not embrace Cessna's offer for two reasons. The Air Force General Consul had determined Cessna's offer was not unique (other companies could provide a similar plane at a comparable cost). In addition, Congress would have to approve any long-term lease arrangement because it exceeded the normal budget commitment. Therefore, the planners had terminated further evaluation of Cessna's proposal.[164]

Following the briefing, General Allen announced two important decisions. First, if funds to purchase new planes could not be found, MAC would favor a lease or service contract for OSA in order "to take advantage of the reduced operating costs."[165] Second, the general said MAC would not concentrate solely on the Cessna Citation II but "should be receptive to the aircraft of other manufacturers."[166]

After six more weeks of work between MAC and Air Staff acquisition experts, Headquarters USAF released Program Management Directive (PMD) R-Q-2163 on 29 September 1982. The PMD called for the multiyear lease of not more than 120 new OSA aircraft. According to the plan, leasing costs were to come from current CT-39A operations and maintenance, modification, and depot funds.[167]

Meanwhile, the MAC deputy chief of staff for Operations (MAC/DO), Maj Gen Duane H. Cassidy, continued to press for the all-turbofan CT-39A replacement as well as a new basing concept. In a 9 November 1982 letter to the MAC DCS

Plans (MAC/XP), General Cassidy said the all-turbofan fleet offered "the best way to train, age, and provide continuation training for today's and tomorrow's Air Force pilots."[168] The general did not mention any of OSA's wartime requirements.

In the same letter, General Cassidy proposed an alternative basing consolidation plan as shown in table 15. MAC/XP apparently wanted to keep the same bases as were currently in use by the CT-39As. However, by cutting OSA operating bases from 15 to 12 (closing the detachments at Shaw AFB, South Carolina; Maxwell AFB, Alabama; and Bergstrom AFB, Texas), the general noted his plan would provide "a more efficient distribution of the replacement aircraft" as well as reduce maintenance overhead, decrease the spare parts supply difficulties, and avoid bases with operating hour restrictions. On the other hand, the new basing would allow for a 16 percent reduction in total airframes, thus requiring only 84 new aircraft to achieve the same flying-hour program and same pilot-aging rate.[169]

Table 15

Suggested OSA Basing – 9 November 1982

Base (Unit)	Proposed Jets	Current CT-39s	Change
Norton AFB, CA (1400MAS)	6	6	0
McClellan AFB, CA (1400 MAS, Det 1)	5	4	–1
Randolph AFB, TX (1400 MAS, Det 2)	8	6	–2
Bergstrom AFB, TX (1400 MAS, Det 3)	4	0	–4
Kirtland AFB, NM (1400 MAS, Det 4)	5	4	–1
Scott AFB, IL (1401 MAS)*	6	9	+3
Offutt AFB, NE (1401 MAS, Det 1)	12	12	0
Wright-Patterson AFB, OH (1401 MAS, Det 2)	9	8	–1
Barksdale AFB, LA (1401 MAS, Det 3)	4	8	+4
Peterson AFB, CO (1401 MAS, Det 4)	5	5	0
Andrews AFB, MD (1402 MAS)	10	12	+2
Langley AFB, VA (1402 MAS, Det 1)	12	4	–8
Shaw AFB, SC (1402 MAS, Det 2)	4	0	–4
Maxwell AFB, AL (1402 MAS, Det 3)	4	0	–4
Eglin AFB, FL (1402 MAS, Det 4)	5	6	+1
Totals:	99	84	–15

* Does not include four aircraft assigned to the Central Training Facility at Scott AFB.

Source: *MAC History: 1 January-31 December 1982* (U), 233 (Secret) Information extracted is unclassified; and Maj Gen Duane H. Cassidy, MAC/DO to MAC/XP, letter, subject: Preliminary OSA Basing Concept,

The proposed basing in table 15 was based on historic CT-39A OSA use so the redistribution was intended to improve overall efficiency while reducing costs. Several points stand out in the table. First, the redistribution would leave the west virtually unchanged so the current CT-39A basing was compatible with actual usage. Next, OSA support would shift from Texas further east

and north. Texas stood to lose six planes while four additional jets would go to Louisiana and three more to Illinois. Also, the southeast's capacity was apparently underused so two units with eight planes would close although Eglin's unit would increase by one new jet. Finally, the biggest adjustment was set for Langley AFB, Virginia. Under the old proficiency flying program, Langley's staff pilots had required a lot of CT-39As to remain qualified. However, when the proficiency program terminated, the OSA support aircraft numbers were not adjusted to properly reflect actual OSA passenger requests. Thus, Langley was grossly over supported and General Cassidy's proposal simply reflected the long overdue adjustment. Eight days after General Cassidy sent his basing proposal to the MAC DCS Plans, the general followed with another letter, this time primarily addressing the mixed fleet issue. The MAC DCS Operations said "the importance of the OSA aircraft as a vehicle for experiencing recent UPT graduates cannot be over stressed, and that to properly train new Air Force pilots for careers in the 21st century . . . we should not select a turboprop for the initial career experience of the UPT graduate."[170]

The general went on to discuss the advantages of a turbofan over a turboprop aircraft for OSA's wartime mission. However, the only real bonus General Cassidy pointed out was the turbofan's higher speed. He disregarded the turboprops larger capacity contending "present experience indicates that typical OSA mission requests are for an average of one to three passengers . . . [so] an eight passenger aircraft [proposed turboprop] is therefore no more productive than a six passenger airplane [proposed turbofan] for this role."[171] Unfortunately, the general missed the point—to increase efficiency, such small requests should normally be combined with others to maximize seat utilization on OSA missions. In addition, wartime load rates could be expected to increase substantially therefore a larger aircraft could be critical. Finally, General Cassidy sidestepped the turboprop's semi-improved and shortfield operational capabilities by saying "the most often mentioned turboprop contender has less satisfactory shortfield performance than many of today's competitive turbojet aircraft."[172] The general did not cite the specific turboprop or turbojets but certainly the C-12F's shortfield capabilities far exceed those of the C-21A. Besides, USAFE officials had already made it clear they needed a turboprop for the expected European wartime scenario as well as their current peacetime operations.[173] Thus, the turboprop clearly satisfied a wartime need that a turbofan plane could not. Therefore, it seems General Cassidy's conclusion that "the ultimate test of capability to meet the wartime need is best served by an all jet fleet" actually ignored the realities of OSA's wartime requirements clearly stated by a theater command.[174]

By the end of the year, Congress had still not funded the CT-39A replacement program nor had the legislators approved the proposed leasing arrangements. Congress was skeptical about OSA's wartime mission and the relationship to the new European Distribution System (EDS). Still, MAC and Air Force officials remained confident of eventual success so staffs kept busy planning for new aircraft.[175]

Another Fight over Flying Hours and Support. At the end of 1981, the Air Staff cut the CONUS CT-39A flying program by 5,940 hours for the remainder of FY 1982 and by 5,340 hours for FY 1983. MAC responded by message stressing that OSA not only provided a "low-cost experiencing vehicle for recent pilot graduates" but served the entire DOD, not just MAC, as necessary airlift transport.[176] MAC estimated the flying-hour reductions would amount to nearly 1,000 fewer OSA missions each year thereby supporting approximately 6,000 less personnel.[177]

On 12 April 1982, the MAC DCS Operations formally asked the Air Staff for permission to overfly the CT-39A program by the same amount as originally cut—5,490 hours.[178] As in previous years, MAC planned to use flying hours left over from other flying hour programs within MAC. Once again, the Air Staff approved the increase so MAC was able to fly the necessary CT-39A flying hours.[179]

By restoring the flying hours to the CT-39A program and improving efficiency, CONUS OSA support improved slightly in 1982. Although passengers supported rose only 172 (72,239 total), passengers submitted dropped by more than 12,000 to only 134,611 so the percent supported climbed to 53.66 percent, the first time that rate had ever exceeded 50 percent. Also, despite an increase of almost 14,000, MAC supported 47 percent of the 75,154 CT-39A requests submitted.[180] Notably, the figures work out to less than two passengers per request submitted. That the passenger support rate increased by five percent from 1981 to 1982 shows MAC/DOOF was indeed more efficiently scheduling the OSA missions.

With the new five-level passenger priority system begun on 1 January 1982, most requests fell onto either Priority 2 or 5. Passenger support in these areas averaged approximately 95 percent for Priority 2 and about 40 percent for Priority 5 for 1982. Priority 1 passengers always received support.[181]

Audits and Rumors of Audits. Based on the receipt of a large number of Hotline referrals and allegations regarding the misuse of military airlift, the assistant to the secretary of defense for Review and Oversight requested that the DOD IG review OSA in 1982.[182] The review's objective was to "identify wasteful or abusive practices in the use of Operational Support Airlift (OSA), OSA-capable airlift, and Special Air Mission (SAM) programs," throughout the DOD including the National Guard and Reserves.[183] The study did not address OSA's wartime operational requirements or training programs, how flying hours were planned or used, or the overall need for the OSA program; nor did the IG look at overseas OSA operations.[184]

Reviewing data from January through April 1982, the IG concluded the OSA system "allowed DOD travelers to use support airlift as an on demand airline."[185] Randomly selecting 20 days during that period, the audit found 37 percent of the OSA mission legs reviewed flew without any space required passengers logging nearly 2,000 deadhead flying hours at a cost of approximately $1.6 million. On an annual basis, the IG therefore figured 35,000 deadhead hours were flown at a cost of more than $28 million.[186] In addition, the IG observed that "general officers or civilians of equivalent rank were

routinely assigned Priority 2 as justification for the military airlift," without regard to cost. In fact, the audit determined that only about 10 percent of the Priority 2 trips and passengers could be justified on the basis of cost effectiveness and mission justification.[187]

The audit made three general recommendations including requiring all requests to contain a cost analysis, not just Priority 5 submissions. The IG also proposed a kind of super-validator office within the DOD to have final approval authority over the scheduling and use of OSA. In addition, this office was to minimize the number of deadhead OSA missions legs.[188]

The secretary of the Air Force, the Honorable Verne Orr, took strong exception to the draft audit in a 14 September 1982 memorandum to the deputy SECDEF. Mr Orr argued that "the number of aircraft dedicated to the Air Force OSA system is based entirely on wartime transportation requirements."[189] The SECAF also noted "the size and operational characteristics of the OSA fleet of aircraft are frequently reviewed for their ability to satisfy the OSA wartime mission" and that a recent (July 1982) study "indicated our present OSA fleet is smaller than required, operationally limited, and should be modernized."[190] In addition, Mr Orr said that "all flying time associated with OSA aircraft is based on the essential training of personnel [and therefore] there is not any cost related to passenger support."[191] On the contrary, the airlift by-product was not wasteful and actually saved the government $223 million annually in official travel cost avoidance.[192]

The principal deputy assistant secretary of defense for Manpower, Reserve Affairs, and Logistics (ASD/MRA&L), Mr James N. Juliana, responded to the draft audit on 30 September 1982 by agreeing with the thrust of the IG report but challenging the IG's understanding of OSA's basic purpose. Mr Juliana pointed out that OSA aircraft were "not procured for the peacetime movement of passengers and cargo [but] to meet wartime operational requirements."[193] Therefore, while more stringent safeguards against abuse were needed, comparing cost of OSA versus commercial airlines was generally not relevant since passengers and cargo were moved via OSA as a by-product of essential training.[194]

The DOD IG released the final audit report on 24 November 1982. In his cover memorandum, Acting Assistant Inspector General Mr John W. Melchner took exception to Mr Juliana's response by noting the MRA&L's comments failed to respond to two of the audit's three recommendations. In particular, Mr Melchner said cost and efficiency are very much a part of DOD policy so corrective actions were necessary.[195]

Not content with the audit's scope and answers, the Office of Management and Budget (OMB) got into the act. OMB requested that DOD "provide specific data on requirements for the OSA aircraft and flying hour programs."[196] The DOD IG then announced another OSA audit would begin in January 1983 to "include an evaluation of criteria for determining aircraft requirements and the justification for the number of flying hours programmed."[197] The MAC comptroller, Col John L. Finan, received word of the new audit in December and informed the MAC DO and IG on 22 December 1982.[198] Thus,

as 1982 ended, MAC faced the daunting prospect of acquiring new OSA aircraft while concurrently defending OSA's need and flying-hour program.

Basing and Flying-Hour Adjustments. Before the end of FY 1982, the Air Force made some small adjustments to CT-39A basing and flying hours. At House Appropriations Committee direction, the Air Force transferred two MAC C-140s from the 58th MAS at Ramstein AB back to the 89th MAW at Andrews AFB.[199] To make up some of the lost OSA airlift capacity in Europe, the Air Staff told MAC to transfer two CT-39As from the CONUS to Europe.[200] MAC, in its Program Action Directive (PAD) 82-3, *Europe C-140/CT-39 Swap*, selected Langley AFB as the base to give up two of its CT-39As to Europe leaving Langley with 10 CT-39As. As part of the transfer, the CONUS CT-39A flying program was cut by 800 hours in both FY 1982 and FY 1983.[201]

Thus, after all the Air Staff cuts, aircraft transfers, and flying-hour redistributions, the CONUS CT-39A program ended FY 1982 at 67,615 hours.[202] MAC commanded 101 OSA CT-39As in the CONUS (97 operational plus four in the CTF) as well as OSA 11 CT-39As and three OSA/SAM C-12As in Europe. These numbers reflect the one CT-39A destroyed in a ground maintenance accident at Ramstein AB in 1982.[203]

1983: Replacement Plans Come to Fruition

Five years after the general requirement was published, 1983 signaled the culmination of extensive efforts to replace the aging CT-39A fleet. Congress accepted the need for continuing OSA as well as the unique leasing arrangement. Meanwhile, the DOD IG spent the better portion of the year performing yet another OSA audit. Unfortunately, support figures dropped off in 1983. However, for the first time in 10 years, OSA performed its wartime mission when it supported Operation Urgent Fury, the rescue mission in Grenada.

CT-39A Replacement: The Plan Comes Together. The beginning of the end for the planning process actually occurred at the very end of 1982. On 22 December 1982, the MAC DCS Plans, Brig Gen Claudius E. Watts III, distributed the preliminary system operational concept (PSOC) for the new OSA aircraft. The PSOC began by stating the primary OSA mission task: "the operational support airlift system is designed to support time-sensitive missions during combat."[204] The PSOC also emphasized that "the OSA fleet is sized and maintained for contingency and wartime requirements, when civil air travel may be limited or not available."[205] Meanwhile, "in peacetime, operational support airlift provides low-cost flying experience for recent graduates of undergraduate pilot training (UPT)," in other words, pilot seasoning.[206] Nowhere in the mission task statement did the PSOC mention peacetime airlift of personal or cargo, even as a by-product of UPT seasoning.

In describing the operational system desired, the PSOC stated the new airplanes would "be a commercially available, current production turbofan and/or turboprop business aircraft."[207] In addition to the standard commercial features, the planes were to be equipped with various pieces of additional

communications and navigation equipment (such as ultrahigh frequency [UHF] radio, tactical air navigation [TACAN], etc.) required to enable the aircraft "to complete its mission under day/night, adverse-weather, and peacetime/wartime conditions."[208] The PSOC also stipulated the ability to install two litters and a seat for a medical attendant within one hour and the capability to start engines without an external power source, both vital features in a contingency environment.[209]

Planners also prepared a complete threat assessment contained in a classified annex as part of the PSOC, but the annex was not normally attached to the main document.[210] Unfortunately, efforts to locate the classified annex were fruitless with MAC officials saying such classified documents were usually destroyed within a few years after publication.

In terms of system scope, the PSOC called for the lease of not more than 123 airplanes for a minimum period of five years with options to extend the lease by one, two, or three years. At the end of the lease, the Air Force had three options. The Air Force could purchase the aircraft, renegotiate a new lease, or acquire new aircraft (either through lease or purchase).[211]

Requirements for two planes were listed as Block A and Block B aircraft. Block A required a turbofan while Block B could be either a turboprop or turbofan. Of the 123 planes, the PSOC divided them up by approximately 80 Block As and 43 Block Bs. MAC planners envisioned all 80 Block A aircraft being stationed in the CONUS along with 20 Block B planes. Meanwhile, the other 23 Block B aircraft would be sent overseas to replace the CT-39As on a one-for-one basis—three to Alaska (AAC), eight to PACAF, and 12 to USAFE. All aircraft were to be considered primary authorized aircraft (PAA) with OSA planes coded ZB except for the CTF aircraft which were TF-coded. Specific numbers for the CTF were not listed but would come out of the 100 aircraft to be based in the CONUS.[212]

Performance requirements highlights are shown in table 16. Obviously, Block B planes were to be slightly larger than Block As and thus capable of carrying extra passengers or cargo. Most importantly, the Block B planes required the ability to operate from short runways—as little as 3,000 feet if necessary. The capability for either plane to operate on dirt or semi-improved surfaces was not listed as a mission requirement. Importantly, Block B aircraft could be either a turboprop or turbofan, so long as the plane met the shortfield requirements.

The PSOC envisioned a support contract providing 56 flying hours per month per aircraft for all planes except the three Block B planes destined for Alaska which would each fly 80 hours per month. In addition, during a contingency the utilization rate would jump up to five hours per day per plane for not more than 30 days per year.[213] What would happen if the war lasted more than 30 days is not covered.

Another glaring error concerned survivability. According to the PSOC, "aircraft will not require special chemical, biological, or nuclear defensive protection."[214] While operating in a nuclear or biological environment was probably well beyond the OSA need, the ability to perform the mission in a chemically

Table 16

OSA Replacement Aircraft Performance Requirements

	Block A	Block B
Passenger Capacity	6–8	8–10
Payload (Allowable Cabin Load)	1,800 lbs	2,100 lbs
Operational Range (plus 45 min. reserve)		
Minimum	1,500 NMs	1,500 NMs
Desired	2,000 NMs	1,500 NMs
Ferry Range (w/auxiliary tanks)	2,700 NMs	2,700 NMs
Maximum Continuous Cruise		
Minimum	.62 Mach	240 KTAS
Desired	.70 Mach	270 KTAS
Critical Field Length for Takeoff[a]	5,000 ft	3,000 ft
Landing Distance (over 50 ft obstacle)[b]	5,000 ft	3,000 ft
Operational Ceiling	35,000 ft	31,000 ft

[a] Maximum weights (takeoff/landing), dry runway, standard day, sea level.
[b] KATS—Knots true air speed.

Source: Headquarters MAC/XP, *Preliminary System Operational Concept for the Operational Support Aircraft (OSA)*, 22 December 1982, 4.

contaminated area should have been included. Certainly USAFE's plans required its forces to operate in a chemical environment considering the very real chemical threat from Warsaw Pact forces. PACAF too needed chemical viability for its OSA planes. North Korean forces quite probably possess chemical weapons and PACAF forces, at least those in Korea, constantly practice operating in a chemically contaminated environment. In addition, since the CONUS-based planes could be expected to deploy overseas during a contingency, all the new OSA planes should have, at a minimum, had their oxygen systems modified to provide a sealed system and allow for the connection to a aircrew chemical ensemble protective mask. Unfortunately, planners disregarded the very real world requirement to operate in a chemical environment. This topic is discussed further in chapter 6.

The PSOC also stated the requirement for contractor logistics support (CLS). CLS was where a contractor basically provided all the required aircraft maintenance and logistics support including spare parts and depot repairs. The Air Force would simply supply the fuel as well as limited transient alert servicing at off-site stops. Mission capable rates were to be 85 percent or greater.[215] Overseas units expected their CLS civilians to support the planes even during wartime. In addition, the CONUS-based CLS personnel were supposed to deploy with their units, if necessary. Chapter 5 contains a discussion of the CLS deployment problems encountered during Operation Desert Shield.

Not surprisingly, the PSOC's basing plan (table 17) was similar to the MAC/DO's plan of November 1992. Again, Shaw AFB, South Carolina; Maxwell AFB, Alabama; and Bergstrom AFB, Texas were dropped from the list of current CT-39A bases. The only two Block A jets destined for overseas bases

Table 17

Proposed Basing Locations for New OSA Aircraft: December 1982

Base	Block A	Block B
CONUS:		
Andrews	10	4
Barksdale	8	
Eglin	6	
Langley	5	4
Wright-Patterson	8	4
Scott	10	4
Offutt	10	
Randolph	5	
Peterson	6	
Kirtland	4	
McClellan	4	
Norton	4	4
Subtotal	80	20
Overseas:		
Elmendorf (AAC)		3
Clark (PACAF)		3
Yokota (PACAF)		3
Kadena (PACAF)	2	
Ramstein (USAFE)		9
Stuttgart (USAFE/EUCOM)	—	3
Subtotal	2	21
Worldwide Totals:	82	41

Source: Headquarters MAC/XP, *Preliminary System Operational Concept for the Operational Support Aircraft (OSA)*, 22 December 1982, Atch, 1.

were two for Kadena AB on Okinawa. From this central location, the jets could readily support PACAF's needs throughout the Far East. Sending two jets to PACAF meant the block mix would change to 82 Block A and 41 Block B aircraft. However, the PACAF basing seemed odd even to the CINCMAC, General Allen. He wondered about the logic of putting Block B aircraft in the Philippines but was told PACAF had "declined to state their base preferences for OSA aircraft until the issue of the number of aircraft they receive is resolved."[216] PACAF wanted 10 new OSA aircraft including three jets but that was more than the eight total planes in the Air Staff guidance.[217] So far as Europe was concerned, all USAFE's replacement planes were to be Block Bs. It is not clear whether USAFE asked for any jets in their package but, after all the discussions about how important a turboprop was in Europe, MAC probably decided USAFE could live with turboprops only.

The PSOC's release was just the opening phase of a long year spent resolving differences between commands as well as satisfying congressional inquiries. During the next few months, planners kept busy revising the PSOC for contract release. In mid-February 1983, Headquarters ASD issued the draft request for proposal (RFP) for the CT-39A's replacement. Although potential bidders had little comment on the RFP's requirements, the issue of foreign bidders arose. About half a dozen foreign-produced aircraft met the general specifications and could be expected to favorably compete with US manufacturers. However, considering that some of the foreign companies were government subsidized and that many felt US defense dollars should go to US companies, the bidder situation was a sticky question. The chairman of the House Subcommittee on Defense Appropriations, Representative Joseph P. Addabbo (D-New York), effectively ended the debate by announcing his intention to introduce legislation in the Defense Appropriations Bill for FY 1984 restricting foreign competition.[218] Because of this action, only US firms took part in the OSA contract competition.[219]

Meanwhile, Representative Dan Daniel (D-Virginia) wrote to the SECAF on several occasions. His 14 February 1983 letter addressed the breakdown of turboprops versus turbofans. Congressman Daniel noted MAC's own figures indicated more than 40 percent of the CONUS legs flown were less than 500 miles long, thereby more suited to a turboprop aircraft. Therefore, the congressman strongly suggested "between 40 and 50 of the intended 120 [replacement] aircraft should be turboprop" or else his Readiness Subcommittee's recommendation would be against the proposed leasing arrangement.[220]

Another legislator, Senator Ted Stevens (R-Alaska), chairman of the Senate Subcommittee on Defense Appropriations, questioned the leasing arrangements and whether the DOD had considered the tax depreciation benefits in its cost-benefit analysis. In his 17 March 1983 letter to Secretary of the Air Force Verne Orr, Senator Stevens forbade the service from issuing an RFP or committing to the lease or purchase of the new OSA planes until the Air Force fully answered his questions and showed a more in-depth cost analysis.[221] Secretary Orr quickly responded to the letter with information which tempered Senator Stevens' qualms.[222] By the end of March, the senator unfroze the program but warned he still harbored reservations and would closely monitor the replacement program.[223]

Having overcome the congressional objections, ASD released the OSA RFP on 30 March 1983.[224] In a 5 May 1983 message, the ASD commander announced the OSA replacement program would enter the evaluation phase on 16 May 1983 and would be assisted by an OSA source selection advisory council (SSAC). Chaired by the ASD commander, the SSAC included representatives from the Air Staff, MAC, AFSC, ATC, and AFLC. Acknowledging the program's visibility, the message also said the source selection authority (SSA) would be the secretary of the Air Force.[225] In other words, the SECAF himself would decide which company or companies won the OSA contracts.

On 29 April 1983, MAC released a revised PSOC for OSA. Among the changes to the original December 1982 PSOC, the new version reduced the

minimum payload for the Block B aircraft to 1,680 pounds although the Air Force desired both block aircraft to carry up to 2,500 pounds. The revised PSOC also lowered the required operational ranges for the higher, desired payloads. The desired cruise airspeed was increased for Block B planes from 270 KTAS to 290 KTAS as well. More importantly, Block B aircraft were now required to have a landing ground roll of just 2,000 feet, even at the highest payloads.[226] In addition, the updated PSOC also revised the tentative basing locations for the new aircraft. Table 18 shows the plans as of April 1983.

Table 18

Proposed Basing Locations for New OSA Aircraft: April 1983

Base	Block A	Block B
CONUS:		
Andrews	9	5
Barksdale	5	
Eglin	6	
Langley	4	5
Wright-Patterson	7	5
Scott	10	4
Offutt	9	
Randolph	5	
Peterson	5	
Kirtland	4	
McClellan	4	
Norton	4	6
Subtotal	72	25
Overseas:		
Elmendorf (AAC)		3
Clark (PACAF)		2
Yokota (PACAF)	2	
Kadena (PACAF)	2	
Osan (PACAF)		2
Ramstein (USAFE)	3	6
Stuttgart (USAFE/EUCOM)	3	—
Subtotal	10	13
Worldwide Totals:	82	38

Source: Headquarters MAC/XP, *Preliminary System Operational Concept for the Operational Support Aircraft (OSA)*, 23 April 1983, Atch, 1.

In the early stages of source selection, there was still some doubt as to the exact mix and total number of aircraft to be acquired. Headquarters USAF/XOOTA released its operational support airlift study in late 1982 and

the Air Staff submitted it to Congress in February 1983. The study stated a requirement for 231 new aircraft to meet wartime requirements.[227] However, the Air Staff probably knew the Air Force would never receive funding for all 231 planes so planners fell back to the one-for-one exchange idea (one new OSA plane for every old CT-39A). The Air Staff finally settled the total number issue (231 versus 123 versus 120) in late February by directing the lease of "not over 120" planes.[228] However, the specific mix question was not effectively determined until 27 June 1983 when the Senate Armed Services Committee (SASC) released a committee report on the FY 1984 DOD authorization directing "that not less than one-third of the aircraft leased as CT-39 replacements be turbopropeller aircraft."[229] The report further stipulated that "priority consideration should be given to aircraft of a type and model currently in the inventory."[230] Similar language came out of the House-Senate FY 1984 DOD Authorization Act Conference Report published on 4 August 1983.[231] Since the Beech C-12 was the only turboprop that met the Air Force's Block B requirements and was currently in the inventory, the congressional language was a clear attempt to steer the Air Force to acquire the Beech plane. It was probably no coincidence that Beech made the C-12 in Kansas, represented by Senator Robert Dole, the Republican leader in the upper house.

Despite congressional direction, six companies submitted bids for the two contracts. In addition to Beech, the Air Force received bids from Gates Learjet (Model 35A turbofan) and Cessna Aircraft (Citation II turbofan and Conquest 441 turboprop), both from Wichita, Kansas, as well as Fairchild Aircraft of San Antonio, Texas (Merlin IVC turboprop); Gulfstream Aerospace of Bethany, Oklahoma (Commander 1000 turboprop); and Piper Aircraft based in Lakeland, Florida (Cheyenne IV turboprop).[232]

On 19 September1983, Secretary Orr announced his OSA decision. As a result of the competitive bidding process, he selected Gates Learjet Corporation to produce 80 Model 35A turbofan planes and Beech Aircraft Corporation to deliver 40 Super King Air B200C turboprop aircraft.[233] Not surprisingly, both Gates and Beech would produce the planes in Wichita, Kansas. The contract arrangements called for a five-year lease with an additional three-year lease option. Contracts also required the companies to train the pilots and provide full logistics and maintenance support during the lease period. Overall contract value was a firm fixed price of $175,403,178 for Gates Learjet and $86,614,321 for Beech.[234]

On 17 October 1983, the CINCMAC, General Ryan, released a message to the MAJCOM commanders, Air Staff, and MAC numbered Air Force commanders outlining the CT-39 replacement program. The general announced the Air Force designations of C-21A for the Gates Learjet Model 35A and C-12F for the Beech Super King Air B200C. The message also included a general description of each plane as well as the tentative delivery schedule and phase-in rationale, general officer training program, and the proposed CTF location (Scott AFB).[235] In addition, MAC recommended the new aircraft be painted basically the same as the CT-39 (all white with a blue stripe along

the side and appropriate USAF markings), but would be discussed at the fall CORONA conference.[236] The delivery plan differed slightly from the November 1982 MAC/DO plan in that Maxwell AFB would get C-21As to replace its CT-39As but Shaw AFB and Bergstrom AFB would lose their OSA units entirely.[237]

According to the OSA system operational concept (SOC) approved by the Air Staff on 3 August 1983, all new aircraft were assigned to MAC. However, operational control overseas would continue to be exercised through the theater commanders—Headquarters USAFE for Europe, Headquarters AAC for Alaska, and the numbered Air Force commanders within PACAF.[238] To handle the new command arrangement in PACAF, MAC planned to create a new OSA squadron, the 1403d MAS, headquartered at Yokota AB, Japan. Concurring with the vice CINCPACAF's message of 11 June 1983, the SOC ordered the two PACAF-bound jets to Yokota (instead of Kadena) to provide better support to the Fifth Air Force commander who doubled as commander, US Forces Japan. Following the same PACAF message request, the SOC also directed establishment of three detachments consisting of two C-12Fs each under the 1403d MAS. OSA units at Clark AB, Philippines, and Kadena AB, Japan, would replace their CT-39 resources with C-12Fs while the SOC established a new unit, also with C-12Fs, at Osan AB, Korea. Thus, plans provided PACAF with OSA support at each numbered Air Force Headquarters.[239]

In Europe, the Air Staff went along with the April 1983 PSOC authorizing six C-21As and six C-12Fs for USAFE/EUCOM support. Plans called for three of the C-21As and all six C-12Fs to be based at Ramstein AB, Germany, while the remaining three C-21As went to Stuttgart, Germany, to support Headquarters EUCOM. The SOC also designated three C-12Fs for AAC at Elmendorf AFB, Alaska. An unspecified number of Scott AFB's allocation were to support the central training facility for both C-12Fs and C-21As. Thus, the aircraft basing approved in the SOC and included in the leasing contracts differed slightly from the April 1983 PSOC plan and is shown in table 19.[240]

Scheduled delivery dates for the C-21As ranged from March 1984 (at Scott AFB) to October 1985 (at Kirtland AFB). C-12F deliveries were more compressed with the first plane set to arrive at Scott AFB in March 1984 and the last delivery to Elmendorf AFB planned for December 1984.[241]

Just after MAC released the basing and delivery schedule, Headquarters USAF/PRPF directed MAC to send one C-12F from the USAFE allotment to the US Embassy at Ankara, Turkey. The Air Staff also altered some of the delivery dates to give AAC one of the first new C-12Fs, accelerated delivery of Yokota's two C-21As by three months, and moved Stuttgart ahead of Barksdale for the CT-39A/C-21A swap out.[242] However, on 31 December 1983, the Air Staff deleted the C-12F requirement at Ankara, Turkey.[243] A few weeks later MAC made another change by sending an Andrews C-21A to Langley in exchange for a C-12F.[244] The final (as far as could be determined) SOC for Operational Support Aircraft (C-21A/C-12F) was published on 1 May 1984 (after the first planes had already been delivered) and reflected these changes.[245]

Table 19

Basing Locations for New C-12F and C-21A OSA Aircraft

Base	C-21As	C-12Fs
CONUS:		
Andrews	9	6
Barksdale	5	
Eglin	4	
Langley	4	4
Maxwell	4	
Wright-Patterson	5	5
Scott	10	4
Offutt	9	
Randolph	5	
Peterson	5	
Kirtland	4	
McClellan	4	6
Norton	4	6
Subtotal	72	25
Overseas:		
Elmendorf (AAC)		3
Clark (PACAF)		2
Yokota (PACAF)	2	
Kadena (PACAF)	2	
Osan (PACAF)		2
Ramstein (USAFE) 3	6	
Stuttgart (USAFE/EUCOM)	3	—
Subtotal	10	13
Worldwide Totals:	82	38

Source: Message 171715Z Oct 83, CINCMAC/CC to Headquarters USAF/CV et al., 17 October 1983, 1-8.

The Camouflage Controversy. Before final acquisition plans could proceed, the issue of the new aircrafts' painting scheme arose. Back in June of 1983, Headquarters MAC/XP directed that the planes be painted "basically all white with a dark blue stripe dividing the fuselage approximately in half."[246] However, in November 1983, the vice chief of staff of the Air Force, Gen Lawrence A. Skantze, questioned the proposed paint scheme. Although General Skantze understood some C-12Fs and C-21As needed to be painted white for diplomatic purposes, he felt a portion of the new aircraft should be colored in a camouflage scheme for five reasons.[247] The vice chief said that

> Camouflage of the OSA aircraft:
> (A) enhances wartime survivability;
> (B) is compatible with airfield tone-down plans;
> (C) provides visible USAF support to the OSA wartime missions;

(D) is consistent with our justification to Congress;
(E) and tracks with the 1981 decision to camouflage all C-141s and C-5s.[248]

General Skantze also shared his concern that "since our rationale to Congress argued that 104 OSA aircraft will be bedded down in the theaters, we now need to determine the proper white/camouflage mix for the 120 aircraft in out lease agreement."[249] It is not clear where the number 104 for theater beddown came from, but the general's overall message was clear—most of the new OSA planes should be camouflaged to survive attacks from the enemy in wartime and Congress in peacetime.

General Ryan quickly fired back a message to the vice chief arguing against any camouflage painting. General Ryan's primary reason was financial—the contracts would have to be renegotiated to require the camouflage scheme and that meant higher costs and possible schedule delays. The CINCMAC also said "both contractors have expressed their concerns to the system program office about a possible heat increase caused by a camouflage paint scheme and its resultant impact on the aircraft avionics systems."[250] The message concluded with an alternative.

> Recognizing the vulnerabilities of OSA in a wartime role, we are developing the capability to convert the aircraft to an appropriate camouflage paint scheme at each theater beddown location. We will be able to convert each aircraft on the ramp with quickdry waterbase paint in less than one day at an approximate cost of $200. We envision this conversion to take place during the pre-hostility buildup and could be used as a diplomatic signal of national resolve.[251]

Unfortunately, General Ryan's logic was flawed for at least two reasons. First, if camouflage paint was going to produce unacceptable heat buildup on the planes avionics' systems, the time to learn of such a problem was in peacetime, not at the outset of hostilities when the planes would be in great demand. Secondly, repainting to show "national resolve" might actually send the wrong signal to other countries by intimating the US was on the verge of beginning hostilities.

Although the financial reasons for General Ryan's opposition were possibly valid, there was certainly time for testing on an early production aircraft to determine if heat build-up was indeed a problem. Such a test would not have been very expensive and could have been included as an contract add-on. Besides, the potential to greatly enhance aircraft survivability far outweighed the limited potential cost impact. After all, if the planes required camouflage paint to perform their wartime mission, they should be painted that way from the beginning.

Gen Billy Minter, the CINCUSAFE, also answered General Skantze's message with some flawed logic. General Minter said "our main concern is that painting even a portion of our in-theater OSA fleet in a camouflage scheme would limit our scheduling flexibility and degrade our peacetime special support airlift capability" and cited countries where USAFE had encountered problems with camouflaged aircraft.[252] The CINCUSAFE then added, "it would be inappropriate to transport many of the DVs we support in camouflaged aircraft," citing such passengers as the president and chancellor of

West Germany, US special envoys and delegates, and congressional delegations.[253] It is indeed unfortunate that General Minter's main concern was peacetime scheduling flexibility and not wartime survivability. In addition, the special support airlift for the very senior DVs the general cited were normally provided by the special air mission (non-OSA) C-140s and C-20s, which were painted in a blue and white diplomatic paint scheme. OSA was rarely used for these DVs. If congressional delegations used OSA aircraft, what better way to show OSA's wartime preparedness than by being camouflaged?

General Minter concluded his message by declaring, "we are prepared to implement an on-the-shelf plan and paint our aircraft within 96 hours."[254] While there is an obvious disparity between General Minter's 96 hour repaint promise and General Ryan's 24 hour deadline, the truth is that no repainting plan was available at the time. In a 15 December 1983 staff summary sheet sent from the MAC DCS Plans, Maj Gen Cladius E. Watts III, to the CINCMAC, General Watts admitted "there is no USAFE plan to camouflage paint MAC aircraft . . . paint is not currently stocked to camouflage the aircraft nor is there an established procedure to do so."[255] In another staff summary sheet sent to the CINCMAC, the assistant DCS Plans, Col Frank J. Kelly, Jr., said "we [MAC] do not have an off-the-shelf plan or any kits prepared."[256] Although MAC was working on a concept plan for repainting, it was far from complete and had not been adequately tested. Instead, according to Colonel Kelly MAC counted on Air Force Systems Command "to develop appropriate camouflage paint schemes for each theater for both the C-12F and C-21A."[257] No record could be found that AFSC ever completed such a project or that MAC ever followed up on the plans. There is no evidence that a rapid beddown base repainting scheme was ever implemented. In 1990 PACAF bases were not prepared for such short-notice changes and, during Operations Desert Shield/Desert Storm, none of the eight C-21As that deployed to Saudi Arabia were repainted.[258]

Although no official record could be found as to General Skantze's reply to the MAC and USAFE messages, he apparently withdrew his objections to the all-white paint scheme. As a result, all the new OSA C-12Fs and C-21As were painted in a glossy, bright white paint.

Manning, Flying Hours, and Support. Since 1980 when pilot aging became a primary peacetime role for OSA, MAC had gradually increased the number of UPT graduates accepted into the CT-39A program. The numbers accepted grew from 15 in 1980 to 17 in 1981, 72 in 1982, and topped out at 75 in 1983. Commensurately, the crew ratio increased from the authorized 1.13 up to an overmanned 1.5.[259] However, with budget cuts forcing the flying-hour program reductions, MAC considered the available hours as insufficient to properly experience the new pilots so MAC reduced attached pilot positions to less than 80.[260] To help the budget crunch, MAC asked the MAJCOMs to support the CT-39A program by submitting their attached pilot requirements in the normal budget process.[261] However, MAC also looked to another way to justify OSA's higher manning level.

In October 1983, the Studies and Analysis Division of the MAC DCS Plans completed a review of OSA wartime manning using a computer simulation model. Colonel Kelly announced that the study showed OSA required a "minimum wartime crew ratio of 1.5 crews per aircraft."[262] In turn, MAC submitted the increased crew ratio requirement along with the study to the Air Staff on 27 October 1983, asking for 112 additional pilot positions within OSA.[263]

Meanwhile, in what had become an annual ritual, MAC battled to keep the CT-39A flying program intact. Previous efforts had succeeded in restoring the FY 1983 program to over 68,000 hours, but a $2.2 million congressional budget cut meant the FY 1984 program would drop to approximately 62,000 flying hours.[264]

Despite flying about the same number of hours in 1983 as in 1982, CT-39A support fell to its lowest levels in history. CT-39As flew only 64,861 passengers out of 133,239 submitted for a 48.6 percent passenger support rate. The overall request support rate also fell from the pervious year coming in at just 42 percent of the 74,884 total requests received by MAC/DOOF.[265]

Passenger support within priority categories also fell noticeably from 1982 levels. Priority 2 support dropped to approximately 88 percent, down from 95 percent in 1982. Meanwhile, support for Priorities 3 through 5 went from about 40 percent in 1982 to just 34 percent in 1983.[266]

The Audit Process Continues. The DOD IG OSA audit announced in late 1982 continued into 1983. On 30 March 1983, the acting assistant inspector general, Mr John W. Melchner, announced the survey phase of the project had been completed and that the audit phase would begin shortly. Mr Melchner explained the next phase's scope:

> The areas include evaluating the wartime readiness requirements for OSA and how those requirements have been quantified into the present or proposed type, number and mix of OSA aircraft. We will also review the flying hour programs developed for OSA by evaluating the basis for and justification for the OSA flying hour readiness requirements (training) and comparing that with actual OSA flying hours.[267]

In what shaped up as a top-to-bottom review of all DOD OSA operations, representatives from all services worked to meet the audit's goals. However, by the end of 1983, the report was still not complete.

Grenada: The CT-39A's Last Hurrah. OSA proponents got their chance to test their ideas of wartime support late in 1983. During the week of 25 October, CT-39As "flew 52 sorties and transported 67 passengers and 4,122 pounds of critical cargo" supporting US operations in Grenada during Operation Urgent Fury.[268] More information on the actual operations is contained in the classified appendix to this paper. However, OSA's future potential was also made evident during the contingency although few people took notice.

Between 25 October and 19 November 1983, MACs C-9As, C-130s, and C-141s engaged in 27 aeromedical evacuation missions. Of these, nine flights carried only one or two litter and/or ambulatory patients. Eight of the nine missions tied up C-130s.[269] Clearly, a C-12F or C-21A equipped with two litters could have accomplished these MEDEVAC missions, in many cases faster and much cheaper than using the large C-130. Unfortunately, the first

deliveries of the new OSA planes were still six months away. Still, aeromedical evacuation is a critical wartime mission for the Air Force, and the new OSA planes promised to provide an important capability for small load medical airlift evacuations.

Transition

As 1983 came to its end, OSA looked back on a year filled with significant events. From contracting for two new aircraft to replace the aging fleet of CT-39As to performing its wartime mission by supporting a real world contingency operation, OSA saw 1983 as the "end to the beginning" of a new era, where years of planning finally came to fruition.

Indeed, 1983 signified an end to a significant, nine-year transitional period for OSA. From consolidation under MAC in 1975 through contracting for new aircraft in 1983, OSA transformed into an efficient, specialized airlift operation on the verge of acquiring modern aircraft and therefore much more capable of accomplishing its wartime mission than ever before.

The next 10 years, from 1984 through 1993, would see the new aircraft successfully assume the OSA mission. However, the early 1990s would also find the 1975 consolidation reversed when MAC's successor, Air Mobility Command (AMC), divested most OSA resources to the various Air Force MAJCOMs, first overseas and then in the CONUS. The next chapter examines this most recent decade.

Notes

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3. Miller, 348.
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6. Ibid., 44–45.
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8. Ibid., 47–48.
9. Ibid., 49.
10. Ibid., 320–24.
11. Miller, 65–66.
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14. Miller, 281.
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31. Ibid., 1–2.
32. Author's personal experience as commander, Detachment 3, 1403d MAS/19th ALS, Osan AB, Korea, from August 1990 to May 1992.
33. Alter, 31.
34. Ibid., 32.
35. Maj Wayne D. Girling, "Proficiency Flying: An Analysis" (Research paper, Air Command and Staff College, Maxwell AFB, Ala., May 1969), 38–39.
36. Ibid., 41.
37. Lt Col Raymond Wellington, Jr., USAF, "Proficiency Flying: Outlook for the 1970s" (Research paper, Air War College, Maxwell AFB, Ala., April 1972), 42.
38. Ibid., 45.
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41. *MAC History: 1974–1975*, 324.
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43. Ibid., 325.
44. Ibid.
45. Ibid. (Note: Information extracted was originally classified Confidential but downgraded to Unclassified by USAF Historical Research Agency, July 1993.)
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49. *MAC History: 1974–1975*, 326.
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51. *MAC History: 1974–1975*, 326.
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66. Ibid., C-4, C-V-1.
67. Ibid., A-1.
68. *MAC History: 1974–1975*, 328.
69. MAC Program Plan 75-12, A-1.
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71. News Release #75-4-3, 89th MAW, 3 April 1975, 1; and *History, 89th Military Airlift Wing, 1 January–30 June 1975*, 1.
72. Only 105 T-39s came under MAC vice the planned 106. One aircraft was destroyed before the transition could be completed. See *History, 89th MAW, 1 January–30 June 1976*, 47; and *MAC History: 1974–1975,* 329.
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Chapter 4

The Modern Era: New Planes and Divestiture

As 1984 began, operational support airlift stood on the threshold of a new era. The first of 120 new aircraft were under construction with the first deliveries set for early spring. Meanwhile, Military Airlift Command (MAC) made plans to complete total OSA consolidation by assuming command of OSA forces in the Pacific from PACAF. Truly, 1984 was a turning point for OSA.

However, less than a decade later, Air Mobility Command (AMC) reversed the consolidation process. In 1992 AMC returned overseas-based OSA forces to their respective theater Air Force components—PACAF, USAFE, and Allied Forces Southern Europe (AFSOUTH). The following year, AMC divested itself of most CONUS OSA assets as well, transferring the units to the host MAJCOMs at their bases. In addition, the Air Force removed all but a handful of the C-12Fs from OSA service and transferred them to a new AMC flying training program. By the end of 1993, Air Force OSA was down to about 75 C-21As and just seven C-12Fs, a far cry from the hundreds, and even thousands of OSA planes in the inventory during the 1940s and 1950s.

Thus, OSA's modern era is one of mixed blessings. On the one hand, new aircraft meant an efficient, capable airlift force. On the other hand, total consolidation followed by nearly complete divestiture created turbulence in the force and raised questions about OSA's very reason for existence—its wartime mission. This chapter therefore traces the period from 1984 through 1993, from acquiring the new C-12Fs and C-21As, through the OSA divestitures of 1992 and 1993, concentrating on how the OSA system worked under MAC as well as OSA's capabilities to perform its wartime mission. Except for minor references, the Persian Gulf War experiences discussed in chapter 5 are omitted. However, several other wartime readiness issues are presented and form the basis for many of the recommendations contained in chapter 6.

1984–1985: A Beginning and an End

The past decade for OSA began with two years of transition. In 1984 MAC received the first of 120 new aircraft, 40 C-12Fs and 80 C-21As. In 1985 the CT-39As completed their long, distinguished OSA career with the last Sabreliner leaving the OSA inventory in December 1985. Thus, 1984 and 1985 were years of transition from the old to the new. However, these two years also saw old problems reemerge. In 1984 another audit raised more questions about

OSA's wartime roles and capabilities. Partly in response to the audit, the DOD issued a revised governing directive in 1985, attempting to better define OSA's peacetime, as well as wartime purposes. Meanwhile, PACAF transferred its OSA forces to MAC in 1984, finally giving MAC command, if not operational control, of all Air Force OSA assets.

1984: New Planes, New Units, Another Audit

While the new OSA planes were under construction in early 1984, planners and senior Air Force leaders resolved the few remaining organizational issues. Then, in the spring, MAC welcomed the first C-21As and C-12Fs into its inventory. Unfortunately, the euphoria of finally accepting the new OSA aircraft was somewhat overshadowed by the release of the DOD Inspector General's (IG) OSA audit. Despite the less than complimentary IG report, MAC and the Air Force were enthusiastic about the new additions to the airlift inventory.

Command, Control, and Organizational Changes. Although the DOD had designated MAC as the single manager for all airlift in 1974, PACAF had disputed the directive's transfer of OSA resources. As a result, PACAF retained both command and control of its eight CT-39As. However, with the new OSA aircraft coming on line, MAC officials wanted to clarify, once and for all, OSA ownership in all theaters. The Air Staff did so by assigning all OSA aircraft to MAC in the OSA system operational concept (SOC) approved on 3 August 1983. In return, the SOC directed MAC to replace the overseas MAJCOMs' CT-39As on a one-for-one basis.[1] However, some PACAF officials still thought they should retain full command and control over the new OSA aircraft.

At the winter CORONA conference, Gen Jerome F. O'Malley (CINCPACAF) and Gen Thomas M. Ryan, Jr. (CINCMAC), discussed the OSA topic. After returning to headquarters, General O'Malley decided to compromise on the issue. On 23 February 1984, he sent a letter to General Ryan agreeing that MAC "should own and operate the OSA with us [PACAF] retaining tasking authority."[2]

As a result of the agreement, MAC proceeded with plans to activate a new OSA squadron and three detachments in the Pacific. On 1 August 1984, MAC activated the 1403d Military Airlift Squadron (MAS) at Yokota AB, Japan, with two C-21As. According to PACAF's requirements, MAC also established three detachments with two C-12Fs each under the 1403d MAS. Detachment 1 at Clark AB, Philippines, and Detachment 3 at Osan AB, Korea (a new OSA base), began operations on 1 September 1984 while Detachment 2 at Kadena AB, Okinawa, activated the next month on 1 October 1984.[3] In a convoluted chain of command, the 1403d MAS came directly under the 316th Tactical Airlift Group (TAG), also at Yokota. However, the 316th TAG fell under the 374th Tactical Airlift Wing at Clark. Therefore, the 1403d MAS's Detachment 1 at Clark actually reported to its parent wing at Clark by going first through a squadron and group at Yokota. Meanwhile, PACAF's numbered Air Forces

retained the daily scheduling and tasking authority for all the new OSA units—Fifth Air Force for Yokota and Kadena, Thirteenth Air Force for Clark, and Seventh Air Force for Osan.[4]

In Alaska, MAC activated Detachment 1 with three C-12Fs under the 616th Military Airlift Group (MAG) at Elmendorf AFB on 1 May 1984. As in PACAF, MAC owned the planes but Alaskan Air Command (AAC) retained daily operational control. In addition to the normal peacetime OSA role, the Alaskan C-12Fs provided support to the remote ground controlled intercept (GCI) sites throughout Alaska at a fraction of the cost previously paid for the routine C-130 airlift.[5]

In Europe, command and control continued as before. The three C-21As and six C-12Fs based at Ramstein AB, Germany, were placed under MAC's 58th MAS with USAFE exercising operational control through MAC's 322d Airlift Division, also at Ramstein. The three C-21As sent to Stuttgart were still owned by MAC but controlled and scheduled by Headquarters European Command (EUCOM). In addition, the aircrews at Stuttgart came from EUCOM personnel authorizations, not MAC's.[6]

In the CONUS, operations continued as before with MAC exercising both command and operational control over the new planes as well as the remaining CT-39As through the 375th Aeromedical Airlift Wing (AAW) at Scott AFB, Illinois. However, the central training facility at Scott was replaced by a new squadron. On 14 January 1983, the 375th AAW Deputy Commander for Operations, Col Nyles B. Courtney, had petitioned MAC to combine the C-9 and CT-39A formal training schools into a new flying training squadron under the 375th AAW. Anticipating new OSA aircraft, Colonel Courtney felt a single training squadron, on a par with the other MAC flying training squadrons for C-130s, C-141s, and C-5s, would better accommodate MAC's training requirements than the current training branches under the wing's training division.[7] The proposal lay dormant for the next year but was revived in early 1984. On 17 March 1984, General Ryan approved the establishment of the 1375th Flying Training Squadron (FTS) at Scott AFB effective 1 May 1984 with four C-21As and four C-12Fs to be assigned to the new unit. The new squadron would also conduct C-9 training using nondedicated mission aircraft from Scott's operational C-9 squadron as well as CT-39A training until the CT-39A requirements ceased on 1 September 1984.[8]

The New Planes Arrive. The long-awaited day of aircraft delivery arrived on 6 April 1984 when General Ryan landed the first new C-21A, tail number 84-0063, at Scott AFB marking MAC's official acceptance of the first new OSA plane. Two other new C-21As landed right behind General Ryan's plane with all three aircraft initially assigned to the 1401st MAS but transferred to the 1375th FTS upon that unit's activation on 1 May 1984. Just over a month later, the 1375th FTS accepted MAC's first C-12F in ceremonies at Scott AFB on 14 May 1984. The CT-39As began phasing out with delivery of the first C-21As and C-12Fs. Still, 56 Sabreliners remained in the MAC inventory as of 31 December 1984, all in the CONUS, while PACAF still operated two CT-39As at Yokota through 31 January 1985.[9]

Acceptance Ceremonies for MAC's First C-21A Learjets at Scott AFB, Illinois, 6 April 1984

Despite a strike by Beech machinists from 6-20 August 1984 that delayed planned deliveries by several weeks, all 40 new C-12Fs were in the MAC inventory and at their new units by the end of 1984. In addition, Gates Learjet had delivered 36 C-21As to MAC by 31 December 1984 with no significant delays. Of those 36 planes, 30 were in the CONUS and six were in Europe.[10]

Both new aircraft types provided OSA with unique performance characteristics that represented significant advances over the CT-39. Importantly, the C-12F, with its larger capacity and short field capability, and the C-21A, with its high speed and efficient turbofan engines, served the OSA mission in mutually complementary roles. Schedulers could choose the best plane for a particular mission based on passenger and cargo load, leg distance, and flight time criticality.

The C-12F Huron. Between late 1983 and the end of 1984, the Beech Aircraft Corporation produced all 40 Air Force OSA C-12Fs at the Beech plant in Wichita, Kansas. The Air Force officially nicknamed the C-12F as the Huron but seldom uses that unglamorous title. The two-person crew consists of a pilot and copilot. In the standard Air Force configuration, the C-12F can carry up to eight passengers although seven is the normal load. Besides the passenger arrangement, the aircraft can be rigged to carry two litter patients

MAC accepts delivery of its first C-12F Huron during ceremonies, Scott AFB, Illinois, on 14 May 1984

and one attendant for aeromedical evacuation missions.[11] In addition, a large cargo door (57" X 54") aft of the wing on the left side of the plane allows large pieces of cargo to be carried. Removing all passenger seats gives a maximum cargo carrying weight of approximately 2,000 pounds.[12]

Two Pratt and Whitney PT6A-42 turboprop engines, rated at 850 shaft horsepower (SHP) power the C-12F. An extremely reliable power plant, the PT6A-42 had an inflight shutdown rate of just one per 100,000 hours. Even at maximum weight, the engines give good performance all the way up to the aircraft's certified ceiling of 35,000 feet.[13]

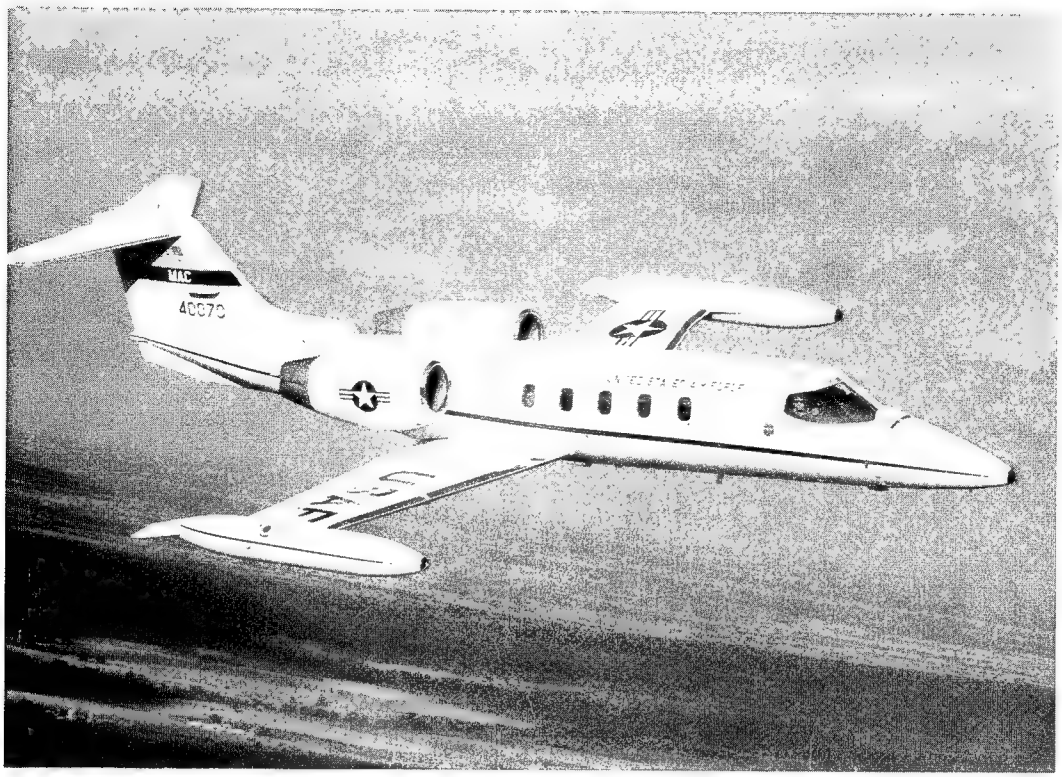
Maximum usable fuel capacity of the C-12F is 544 gallons, which equals to 3,536 pounds using JP-4 and 3,699.2 pounds with JP-5.[14] With a standard cruise true airspeed (TAS) of around 270 knots, the useful range (not counting minimum fuel reserve) is approximately 1,200 nautical miles or just over four hours. The aircraft's basic weight plus crew (empty operating weight) is usually just under 9,000 pounds. Since the C-12F is limited to a takeoff weight of 12,500 pounds (waived to 14,000 pounds in PACAF under certain circumstances), the only time the plane can depart with a full fuel load is when no passengers are on board.[15] Therefore, every mission requires a tradeoff between fuel and passengers—more people means less fuel and thus less range. A full load of eight passengers reduces the range to less than 1,000 nautical miles.

C-12F Huron Flying over Midwestern Farm Fields

The C-21A Learjet. Gates Learjet Corporation manufactured the 80 Air Force C-21As primarily at its facility in Wichita, Kansas, with final assembly in Tucson, Arizona. Although the Air Force never officially nicknamed the C-21A, it is usually referred to as the "Learjet." Like the C-12F, the C-21A is crewed by a pilot and copilot. However, the C-21A carries only six passengers comfortably but can, if necessary, squeeze in a seventh person.[16] The C-21A can also carry two litter patients and one attendant. Although not equipped with a cargo door, the jet can carry freight pieces limited in size to what can fit through the 35-inch wide crew entrance door. Maximum cargo weight is 3,153 pounds.[17]

Powered by two Garrett Air Research TFE731 turbofan engines, the C-21A can develop 3,500 pounds of takeoff thrust per engine. The C-21A's maximum certified ceiling is 45,000 feet although the engines are somewhat sluggish at that altitude. The C-21A has a maximum fuel capacity of 931 gallons. Extremely fuel efficient at cruise altitude, the aircraft has a maximum range of just over 2,000 nautical miles with a 45-minute fuel reserve when carrying six passengers. High cruise true airspeed is 460 knots or .81 mach at 41,000 feet.[18]

Not as capable as the C-12F on short runways, the no-wind distance the C-21A requires for takeoff on a dry, level, hard surfaced runway at sea level



C-21A Learjet on a Training Mission for the 1375th Flying Training Squadron

at maximum weight is over 4,200 feet. Landing at maximum aircraft weight under the same conditions requires nearly 3,100 feet, over 1,000 feet more than the C-12F.[19] Range with four passengers, maximum fuel plus a 45-minute reserve is 2,289 NMs.[20]

Avionics and Instrumentation. The C-12F and C-21A aircraft have similar communication packages. Each aircraft carries two very high frequency (VHF) radios, one ultrahigh frequency (UHF) radio, and one high frequency (HF) radio for extremely long range and/or overwater communication.[21] Neither plane came with secure voice communications as the Air Force apparently did not think such a capability was important for the new OSA airplanes.

Navigation packages for both aircraft include two VOR [very high frequency omni range]/ILS [instrument landing system]/GS [ground speed] receivers, one tactical air navigation (TACAN) system, and two automatic direction finding (ADF) beacon receivers.[22] The C-12F is equipped with the global navigation system (GNS) using very low frequency (VLF) and Omega for long-range navigation. The GNS uses preprogrammed way points that the pilots must manually input. Unfortunately, GNS is deemed unreliable if not checked against a ground reference every hour.[23] The C-21A has the universal navigation system (UNS) which is more capable than the GNS. The UNS automatically tunes and identifies navigation aids preprogrammed into the

UNS memory. The UNS is reliable without ground updates because the unit shifts to VLF/Omega navigation inputs when beyond ground station range.[24]

The C-12F and C-21A have radar altimeters, color weather radar, and identification, friend or foe (IFF) with mode IV for secure identification under wartime conditions. Each aircraft also has dual flight directors with separate air data computers as well as auto pilot with preselectable altitude capture and hold.[25]

Logistics Support. The leasing arrangements with both Beech and Gates required the contractors to provide full logistical support for the duration of the leases. Therefore, subsidiary companies under each manufacturer immediately began maintaining OSA aircraft after delivery under separate Air Force contracts administered by Air Force Logistics Command at Tinker AFB, Oklahoma. Beech Aerospace Systems Incorporated (BASI) supports the C-12F while Gates Learjet Aircraft Service Company (GLASCO) maintains the C-21A. Both companies provide all maintenance and parts support under the Contractor Logistics Support (CLS) Program. The CLS contract also requires the companies to maintain their personnel on full mobility status at those OSA units with a mobility commitment.

The 1984 Audit. More than 10 months after announcing yet another OSA audit, the DOD Inspector General released the DOD (IG) Draft Report on the Audit of OSA Aircraft and Flying Hour Programs (Project 3ST-037) on 27 September 1984. The report proposed a number of changes designed to make OSA more efficient and responsive to its primary role—wartime support. A copy of the report could not be located but the 1984 MAC history summarized the audit's recommendations as:

> (1) Define and document the specific role OSA will play to augment the wartime requirements on a worldwide basis;
>
> (2) Based on the above definition, quantify the number, mix, and type of aircraft needed to accomplish the requirements;
>
> (3) Adjust the present size and make-up of the operational support airlift fleet in accordance with the determination in (2) above;
>
> (4) Develop flying hour programs to met the readiness training requirements for operational support airlift only and appropriately revise the FY 1985 budget and FYDP [five year defense plan] submissions; and
>
> (5) Air Force only: Remove flying hours that are used to train first-assignment pilots from the OSA flying hour program.[26]

In his 11 October 1984 response, Maj Gen Donald D. Brown, MAC's DCS for Operations, said MAC generally concurred with the audit's findings and "intent." General Brown told the DOD IG that MAC was already working with the Air Staff on an "OSA Master Plan" to "delineate OSA's wartime mission and identify wartime requirements."[27] However, the general took exception with the audit's last recommendation [see (5) above]. He emphasized that OSA provided new Air Force pilots with invaluable early flying experience at a much lower cost than MAC's larger, major weapons systems. General Brown concluded by proposing that this pilot aging role be officially

recognized as one of OSA's important missions. To meet the wartime readiness training requirements and provide sufficient aging experience, the general estimated that OSA would need slightly under 57,000 flying hours each year, about 5,000 less than the FY 1984 authorized program.[28]

Support Figures. MAC ensured the OSA system made a smooth transition from the CT-39As to the new planes. As a result, support totals remained at nearly the same levels as the 1983 figures. Total passengers supported came to 62,852 out of 127,147 submitted for a 49 percent passenger support rate. Overall requests submitted fell slightly to 70,848 with 43 percent supported.[29] These numbers meant that validators submitted an average of less than two passengers per request.

As in previous years, passengers in the top priority level always received OSA support. Meanwhile, support for Priority 2 passengers ended the year at 87 percent, about one percent less than in 1983. Priorities 3-5 received support only one-third of the time, slightly less than in 1983. However, the trend at the end of 1984 was somewhat foreboding. During the period from October through December 1984, support fell to 81 percent for Priority 2 passengers and just 27 percent for Priorities 3-5 equating to just 44 percent overall passenger support.[30]

The new C-12Fs and C-21As combined to fly 7,238 hours by the end of the year. Combined with 66,934 hours flown by the CT-39As, the OSA total of 74,172 hours was on a par with FY 1983 flying hours for the CT-39As alone.[31]

Despite the lower support numbers and the negative audit results, MAC OSA ended 1984 on an upbeat note. All 40 C-12Fs were at their new stations in the CONUS and overseas. Nearly half of the C-21As were also on hand. Units at Scott AFB, Andrews AFB, Offutt AFB, Wright-Patterson AFB in the CONUS and Ramstein AB and Stuttgart in Europe had their new planes.[32] Remaining units awaited their 1985 C-21A deliveries. The long years of painstaking planning by numerous action officers and senior Air Force leaders had paid off handsomely in two tremendous new additions to the MAC and Air Force inventories.

1985: End of an Era

As 1985 began, MAC continued building up the C-21A fleet while steadily reducing CT-39A operations. By the end of the year, the process would be complete and the last OSA Sabreliner would leave the inventory. MAC would control a small aircraft OSA fleet of 80 C-21As and 40 C-12Fs. Meanwhile, the twin issues of manning and flying time continued high on the agendas of senior MAC and Air Force leaders. In addition, towards the end of the year, the DOD made a small but significant policy change concerning OSA's purpose.

The Changeover is Completed. C-21A deliveries continued on schedule throughout 1985. As the C-21As arrived at their new units, the CT-39As ceased operations and, in most cases, flew to the "bone yard" at Davis-Monthan AFB, Arizona, for final disposition. Yokota AB, Japan, received its

two C-21As in January 1985 while the nine CONUS OSA units still flying CT-39As received their new planes as the year progressed. Finally, on 25 October 1985, the 80th and last Air Force C-21A arrived at Kirtland AFB, New Mexico, and began operations with Detachment 4, 1400th MAS.[33] The last OSA CT-39As retired in late December with the closings of Det 2, 1402d MAS at Shaw AFB, South Carolina, and Det 3, 1400th MAS at Bergstrom AFB, Texas.[34]

Table 20 shows the number of OSA T/CT-39A aircraft and flying time from 1976 to 1985. In those ten years when MAC controlled all CONUS CT-39A OSA operations, the 100 plus Sabreliners flew approximately three quarters of a million flying hours and carried nearly 800,000 passengers. During that time, the CT-39A fleet experienced only one fatal accident—in April 1985 when a 1402d MAS jet piloted by the TAC commander, Gen Jerome F. O'Malley, crashed during landing at Wilkes-Barre Airport in Pennsylvania.[35] Despite that singular tragedy, for 25 years the T/CT-39A proved itself as a safe, capable aircraft for the peacetime OSA mission as well as a pilot proficiency trainer. Showing its diversity of command assignments and relatively simple operation, it is probably safe to say that during those 25 years the T/CT-39 was flown by more Air Force pilots than any other single aircraft in the inventory.

Table 20

T/CT-39A Aircraft and Flying Time: 1976-1985

Year	USAFE	AAC	PACAF	MAC[a]	Totals
1976b	14/11,951	1/821	8/7,583	105/130,558	128/150,913
1977	12/7,863	1/365	8/6,179	105/103,431	126/117,838
1978	6/2,384	———	8/5,669	104/95,099	118/103,152
1979	———	———	8/5,773	110/88,280	118/94,053
1980	———	———	8/5,911	110/72,990	118/78,901
1981	———	———	8/5,654	113/69,871	121/75,525
1982	———	———	8/4,867	112/72,222	120/77,089
1983	———	———	8/4,765	112/68,303	120/73,068
1984	———	———	8/5,539	56/66,934	64/72,473
1985	———	———	—/1,233	—/21,747	—/22,980
Total Hours	22,198	1,186	53,173	789,435	865,992

[a]Flying hour figures do not agree with figures listed in annual MAC histories for 1978 through 1982. MAC histories only listed CONUS hours whereas *History of USAF Flying Hours* included MAC CT-39A hours flown in Europe and are included under MAC column totals.

[b]Fiscal year dates changed between 1976 (1 July 1975-30 June 1976) and 1977 (1 October 1976–30 September 1977). Figures for the 1 July–30 September 1976 quarter were released as "FY 197" and included with FY 1976 figures. Therefore, data for 1976 represents 15 months (five quarters).

Source: *History of USAF Flying Hours:* FY 1975 through *1985;* and *Military Airlift Command: History: 1975* through *1985* (U). (Secret) Information extracted is unclassified.

Another Battle over Flying Hours. Although the CT-39A support came to an end in 1985, the battle over OSA flying time did not end. Indeed, what seemed an annual battle actually intensified. At the core of the issue was undergraduate pilot training (UPT) pilot absorption.

The C-141 pilot force was underexperienced due to copilot overmanning caused by MAC accepting too many young pilots into the C-141 force. To alleviate the problem, MAC took several dozen additional pilots into the C-21A force. In doing so, OSA C-21As became the primary aircraft within MAC to absorb extra UPT graduates.[36]

As long as MAC got enough flying hours for OSA, the C-12Fs and C-21As, with much higher in-commission rates than the CT-39As, could fully *season* the young pilots in three years. After that time, these *aged* pilots would have the command and even instructor experience to transition into one of MAC's major weapons systems. However, MAC could not hope to ensure each pilot achieved the minimum number of hours necessary in those three years (about 1,400) unless the Air Staff increased the OSA flying-hour program by 22,180 hours above the level that was currently authorized for FY 1986. MAC came up with a $3 million offset to purchase an additional 6,354 hours in FY 1986 but was still more than 15,000 hours short of the target. Flying-hour shortfall estimates for the following five years ranged from 22,170 in FY 1987 to 6,576 in FY 1991.[37]

The Air Staff was not sympathetic to MAC DO's requests so the CINCMAC, General Ryan, took the issue to the vice chief of staff of the Air Force, Gen John L. Piotrowski, in early September of 1985. General Ryan reiterated the argument that the alternative to fully funding OSA was to accept overmanning and therefore underexperience in the more costly weapons systems. The alternative also meant "reduced future capabilities" according to General Ryan.[38]

The Air Staff added 3,333 hours to the OSA program on 23 September 1985 but it still was not enough.[39] The vice chief responded to General Ryan's message on 1 October 1985 saying that although he agreed OSA was "a relatively inexpensive way to add experience to our crew force . . . it appears that we cannot exceed the FY 86 flying-hour program until a new contractor logistics support agreement is negotiated [expected in early 1986]."[40] Three days later, General Ryan's successor as CINCMAC, Gen Duane H. Cassidy, personally appealed to General Piotrowski citing the Air Force Council's December 1984 promise "to support the proposed MAC suggested fix with the funds needed."[41] General Cassidy suggested reworking the C-21A support contract before the scheduled 1986 talks but to no avail.[42] A week later, the MAC staff identified two more offsets (from C-141 low level and C-5 joint readiness training hours) amounting to approximately 4,500 additional OSA hours.[43] However, even with these offsets, the CONUS flying-hour program would be more than 10,000 hours short of requirements.

One offset not offered was general officer flying. A 9 October 1985 point paper signed by Col James E. Malley, acting deputy director of Current Operations at Headquarters MAC, said "general officer flying accounts for an average of 5,000 hours each year."[44] Therefore, eliminating general officer

flying or, at a minimum, sharply reducing the program to those few MAC generals in the direct OSA chain of command, could have cut the remaining shortfall nearly in half. The contractor logistics support costs alone ran approximately $350 per hour so at least $1.75 million per year could have been used to fund productive UPT aging hours instead of allowing generals to fly the planes.[45] However, without offering general officer flying as another offset, or ever citing wartime readiness requirements as a justification for more flying time, MAC waited in vain throughout the rest of 1985 for the Air Staff to make a funding decision.

Support for Exercises. Fearful of congressional criticism, the Air Staff asked MAC in early 1984 "to arrange for deployment of OSA aircraft in the FY 85 exercise cycle or prior to congressional review of the operational support airlift program in FY 86."[46] In November 1984, stung by the DOD IG's audit report, the Air Staff "asked MAJCOMs to revise their OPLANS to include the new OSA aircraft and thereby better define OSA wartime requirements."[47] Not letting the issue drop, in the summer of 1985 the Air Staff asked MAC to "provide a status of these actions in anticipation of follow-up action by Air Force and DOD auditors and to further validate the OSA wartime mission prior to FY 86 congressional review." The Air Staff was clearly worried that MAC and the Air Force had not sufficiently justified OSA in terms of the DOD directives.

Meanwhile, a 13 July 1985 point paper signed by the MAC assistant DCS for Operations, Brig Gen Donald D. Smith, stated "theater planners included C-21A/C-12F aircraft in their wartime beddown plans" at the January 1985 Joint Strategic Capability Plan (JSCP)/War and Mobilization Plan, Vol. 3 (WMP-3) conference.[48] In addition, MAC/DOOF was revising OPORD 20-81 (VOLANT SABRE) which covered the CONUS wartime requirements. The paper did not mention any specific missions beyond airlifting "high priority personnel and cargo" but instead concentrated on changes to AFR 60-23 and DOD Directive 4500.43 that included pilot aging as a valid peacetime OSA mission.[49]

Not satisfied with merely being included in the war plans, General Cassidy wanted such plans to be explicit about the use of OSA resources in conflicts. According to the 1985 MAC History, the general "also encouraged the continuation of efforts to secure and implement an OSA role in field training exercises so that OSA aircraft and personnel could practice their wartime role."[50] Unfortunately, the CLS contracts limited any such OSA exercise participation by restricting aircraft deployments. MAC planners and contracting officers had obviously not anticipated actually practicing OSA's wartime role during peacetime so they had not thought to include such exercises in the contract. Equally disturbing in the MAC history's discussion of the subject was that MAC managers pointed out to General Cassidy that there was "an insufficient number of OSA flying hours and high priority competing demands for OSA airlift."[51] What is most alarming is that planners clearly thought that carrying generals and staff officers around the country in the normal, peacetime routine was far more important than ensuring OSA could do the mission in a wartime scenario, where people and planes would have to deploy to other,

perhaps even austere bases, and operate under very demanding, contingency conditions.

A New Unit Forces C-12F Moves. To make up for TAC's loss of leased aircraft for range and classified mission support at Nellis AFB, Nevada, MAC established a C-12F detachment (Det 5, 1400th MAS) there on 1 February 1985. Four planes began initial operations with a fifth to be added in FY 1986.[52] According to the plans, two planes would come from the 1400th MAS at Norton AFB, California (leaving four), and one C-12F each from Det 2, 1401st MAS at Wright-Patterson AFB, Ohio (leaving four), and from the 1402d MAS at Andrews AFB, Maryland (leaving five). The fifth plane was to come from either Langley AFB, Virginia, or the formal school at Scott AFB, Illinois.[53]

Flying Time and Support. MAC OSA ended 1985 by compiling a total of 77,757 operational flying hours. Broken down by plane, C-12Fs flew 22,700 hours, C-21As flew 33,310 hours, and, before their retirement, CT-39As flew 21,747 hours. The C-12Fs and C-21As at the formal training squadron flew another 3,094 hours not included in the operational totals. In addition, PACAF CT-39As flew 1,233 hours before they left the inventory.[54]

Despite maintaining roughly the same number of flying hours in 1985 as the year before, total support continued to drop. Passengers flown fell by over 8,000 from the previous year to just 54,414 out of 116,131 submitted for a 47 percent passenger support rate. That rate was the lowest since 1980 when CT-39As carried over 20,000 more passengers with barely 1,000 more flying hours. Meanwhile, overall passenger requests fell to 64,328 with the request support rate dropping to only 40 percent, again the lowest since 1980.[55] By priorities, the news was also discouraging. Priority 2 support was about 83 percent while Priorities 3 through 5 were flown just over 28 percent of the time.[56]

A Revised Governing Directive. At the end of 1985, the DOD released an updated version of DOD Directive 4500.43, *Operational Support Airlift (OSA)*. As in the directive's February 1981 edition, the OSA aircraft inventory was to be based solely on wartime readiness requirements.[57] However, under peacetime roles, the new directive added the mission to provide cost-effective seasoning of pilots.[58] This official recognition of the pilot aging role was quite significant as MAC shifted peacetime OSA from the attached pilot proficiency role to a mission of providing relatively low-cost flying experience for young pilots. MAC would pin many of its arguments over OSA flying hours in the late 1980s on this pilot seasoning justification.

The Mid-1980s: A Summary

Certainly the highlight of the mid-1980s was the acquisition of brand new OSA aircraft. The modern C-12Fs and C-21As replaced the venerable CT-39s, continuing the support airlift tradition within the Air Force. In addition, MAC finally assumed command of all OSA forces throughout the world, even though theater commanders still retained operational control overseas.

Clearly, support figures in the early 1980s showed the value of OSA's airlift by-product rapidly diminished. However, MAC officials stressed OSA was now the primary means to give recent UPT graduates flying experience at relatively low costs. By the end of 1985, DOD finally officially recognized the pilot seasoning role. Unfortunately, DOD IG auditors also blasted OSA for focusing on this peacetime pilot aging while ignoring OSA's wartime readiness requirements.

The evidence certainly supports the IG's charges. The number of new OSA aircraft was merely based on a one-for-one swap with the old airframes, not on validated wartime support requirements. Meanwhile, MAC justified the OSA flying-hour program on the basis of pilot experience requirements, not on wartime training needs. Such additional issues as aircraft paint schemes and unit basing also reflected the peacetime mentality. Meanwhile, the need for training programs to ensure OSA crews could operate in a wartime environment had not even been recognized, much less implemented.

The remainder of the 1980s and the early 1990s would see several efforts to correct these inadequacies. Unfortunately, many such endeavors would ultimately fall short of the mark.

The Late 1980s

Several issues dominated OSA in the late 1980s. First, to increase OSA flying time and ease financial problems for Gates Learjet, the Air Force terminated the C-21A and C-12F leases early by purchasing the aircraft outright from their manufacturers. Second, the stillborn establishment of the Pacific distribution system (PDS) caused a number of OSA aircraft transfers and unit closures/realignments. Third, another government audit of OSA led to more recommendations for change. Fourth, airspace management became a hot topic in 1989 but OSA needs seemed to be forgotten. Fifth, the ability to operate in a combat environment finally spurred efforts to include OSA in the combat aircrew training (CAT) program. Despite the added emphasis on wartime readiness, peacetime pilot aging still dominated OSA in the late 1980s.

Early C-21A/C-12F Procurement

Even before MAC accepted the last C-21A in October 1985, forces were at work which would ultimately lead to terminating the original five year leases early for the C-21A, as well as the C-12F, in favor of outright aircraft purchase. Reasons included the financial difficulties of the C-21A's manufacturer (Gates Learjet Corporation) and MAC's desire to increase the monthly flying hours per aircraft which was difficult to do under the lease agreement. Buying the planes also promised to increase MAC's potential for deploying the OSA planes for exercises of contingencies.

Gates Learjet Enters a Tailspin. Even before the last C-21A was off the assembly line, Gates Learjet faced financial problems. Although production of the 80 C-21As had given the company a big boost in 1984 and 1985, commercial sales were off sharply. In September 1985, the company furloughed more

than 5 percent of its work force and soon announced additional layoffs of another 15 percent. Meanwhile, Gates Learjet needed more than $100 million in bank financing just to cover the Air Force lease.[59] Despite the bailout, company officials indicated that Gates Learjet was still losing money on the C-21A lease. One hope was for the Air Force to increase the flying rate per aircraft from the current 56 hours per month up to 78.[60] With this increase in mind, the Gates Learjet Corporation president, Mr James B. Taylor, briefed the Headquarters USAF/RD, ASD commander, and CINCMAC at separate visits in early October 1985.[61]

The Push to Increase Flying Time. As described previously in this chapter, the OSA flying-hour program had steadily decreased since MAC took over the program in 1975. Between 1976 and 1984, OSA hours fell from over 121,000 to less than 73,000, a cut of almost 40 percent. Meanwhile, MAC had steadily accepted more UPT graduates into the OSA force in an effort to give the young pilots valuable flying experience in a relatively low-cost aircraft and to minimize overmanning in the major weapon systems. Unfortunately, MAC could not provide the minimum flying time necessary to adequately prepare the new pilots for their follow-on assignments within the diminishing OSA flying-hour authorizations.

The 56 hour per month per aircraft rate contracted in the original OSA leases provided the average C-21A copilot with only 18 hours per month of flying time. Upping the aircraft utilization rate to 78 hours per month could provide the copilots with 26 flying hours per month and allow their upgrade to aircraft commander in one of MAC's three major weapon systems (MWS) in less time. MAC planners estimated net annual savings from increasing the C-21A rate (and therefore lowering MWS flying time) could amount to nearly $4 million per year.[62]

Increasing the OSA utilization rate offered two other advantages. First, more hours meant more by-product airlift. With MAC supporting less than 50 percent of CONUS requests, increasing flying time would consequently increase support. Planners estimated the Air Force could save more than $5 million per year by using OSA instead of commercial airlines.[63] The second added advantage offered by the higher flying rate was increased wartime readiness through deployability. The 56 hour restriction limited OSA forces from deploying for exercises, especially to forward operating locations (FOL) overseas, to practice their wartime readiness missions. A CONUS C-21A required 44 hours just to fly to the Far East and return, leaving precious little flying time to actually fly in a theater exercise or training environment. Raising the utilization rate to 78 hours per month added a significant capability to deploy, effectively train, and return to home station, all within the one month limit imposed by the CLS contract.[64]

Another Option: Early Purchase. To increase the flying rate from 56 to 78 hours per month, Gates Learjet proposed a contract change that would cost the Air Force $98.3 million over the remainder of the five-year lease. The Air Staff could not come up with anywhere near that figure but did approve a small increase in the FY 1986 rate to 61 hours per month, subject to contract

renegotiation. In addition, the Air Staff began looking into exercising the original contract's aircraft purchase option earlier than the five year point.[65] By owning the planes, the Air Force would have much greater flexibility to increase the aircraft's utilization rate. Yearly lease costs amounting to more than $16.5 million per year for the C-21As would also be saved by an early buyout.[66]

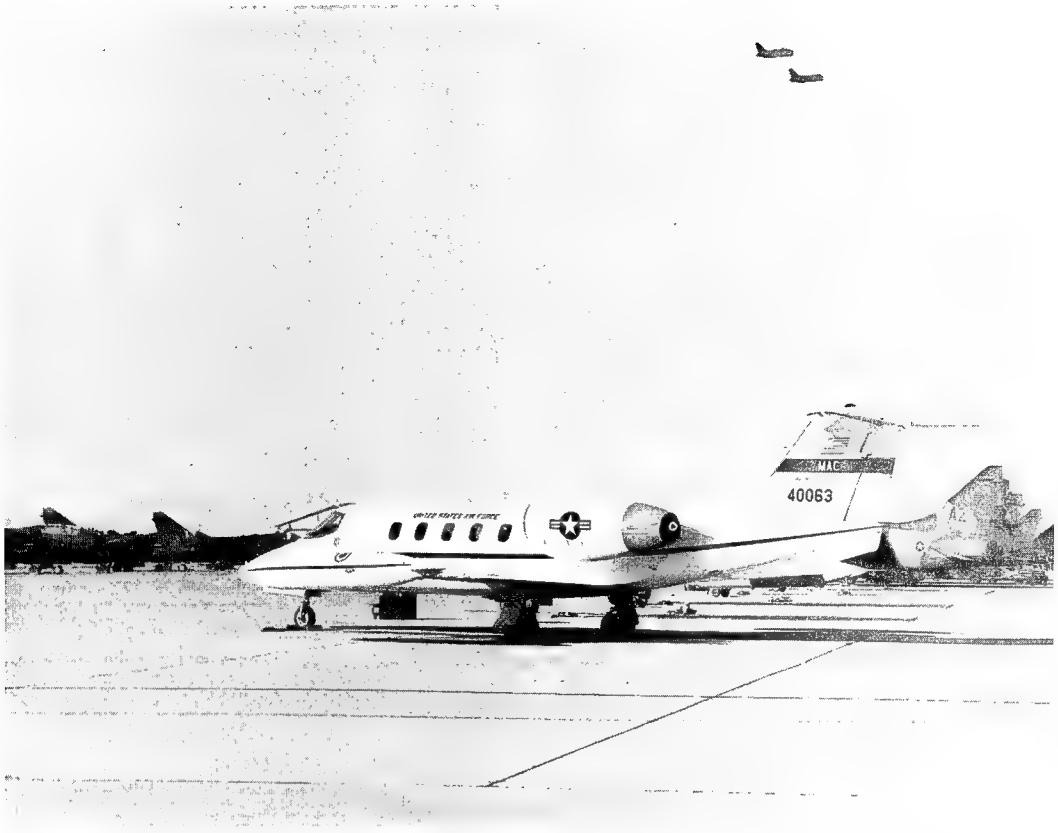
In the meantime, Gates Learjet began lobbying members of Congress. With the company's headquarters in Tucson, Arizona, Senators Barry Goldwater (republican chairman of the Senate Armed Services Committee) and Dennis DeConcini (democrat member of the Senate Appropriations Committee) became strong supporters of the early purchase option. The influential chairman of the House Armed Services Committee, Representative Les Aspin (D-Wisconsin) also became an ardent buyout proponent.[67]

In the spring of 1986, both the House and Senate passed appropriations bills that included language allowing the Air Force to submit reprogramming requests for the early purchase of the C-21As as well as the C-12Fs. However, the two bodies differed on the amount of money the Air Force should reprogram. After legislators met in conference to resolve their differences, the House issued the conference report for the FY 1986 Urgent Supplemental Appropriations Act on 19 June 1986. The report said "acquisition of the C-21A aircraft should cost no more than $176,000,000, while acquisition of the C-12s should not exceed $48,000,000" but added the appropriations committees would consider higher amounts if necessary.[68] However, the report also stipulated that the costs of an early buyout had to save at least 10 percent over the total program estimates for the existing lease.[69]

On 1 July 1986, the Air Staff directed Systems Command to begin negotiations with Gates Learjet and Beech.[70] Not surprisingly, the anticipated costs for each contract buyout rose from the figures directed in the June 1986 House conference report. In late September, the Air Staff authorized Systems Command to obligate $180 million for the 80 C-21As and $52 million for the 40 C-12Fs, pending final congressional approval. Timing was critical because purchase funds came from FY 1984 monies which could not be obligated after 30 September 1986.[71] Fortunately, Congress gave the OK in time and the Air Force completed negotiations with the two aircraft companies on 30 September 1986. Breaking down the $232 million package, unit costs came to $1.3 million for each C-12F and $2.25 million for each C-21A. Formal acceptance of the aircraft occurred soon after contract signature giving the Air Force official ownership of all 120 aircraft.[72] Maintenance and logistics support remained under the CLS program with GLASCO and BASI.

The Pacific Distribution System

Back in December 1985, the 18th C-23 Sherpa arrived in Europe completing the establishment of MAC's European distribution system (EDS). Begun at the end of 1984, the EDS was intended to provide USAFE with dedicated airlift for critical spare parts during contingencies or war. Other commands



The First Production C-21A Parked on the Ramp at Davis-Monthan AFB, Arizona

viewed the EDS with jealously and soon proposed their own assured airlift systems. Strategic Air Command (SAC) wanted an assured distribution system for the CONUS while PACAF proposed the Pacific distribution system to provide dedicated support for its tactical fighter logistics needs in the Pacific.[73]

Justifications and Requirements. PACAF developed a statement of need for the PDS citing the wartime shortfall of intratheater airlift assets until deploying C-130s arrived in theater. In addition, typical PDS cargo was small and not efficiently carried by the C-130s. Even in peacetime, common user airlift was not responsive to PACAF's logistical needs. PACAF argued a dedicated airlift system similar to the EDS would be more responsive and more efficient.[74]

Planners envisioned a unit with six light, cargo configured aircraft capable of carrying about 1,000 pounds of cargo. MAC would own the planes but PACAF would schedule them, much like the current OSA operations in the Pacific.[75] The new unit would be logically based at Kadena AB in Japan, home of the Pacific Logistics Support Center (PLSC).[76]

Reticence and Approval. MAC officials were not very receptive to the PDS concept. The 22d Air Force commander, Maj Gen Donald W. Bennett,

told General Ryan in July 1984 that the PDS concept duplicated MAC's existing aerial port system.[77] General Ryan agreed and advised PACAF to continue using MAC's existing system but directed MAC to develop a priority, small package delivery system to handle PACAF's small logistics items needs.[78] After taking over as CINCMAC, General Cassidy expressed MAC's continued reluctance when he told reporters he feared "a proliferation of theater-unique, dedicated mini-airlines."[79]

Despite MAC's reservations, PACAF went ahead and produced a PDS statement of need (SON) in September 1985 followed by a draft SOC for PDS in April 1986.[80] Emphasizing its importance to the command, PACAF placed the PDS as its number one priority in the FY 1988–1992 budget. With such strong backing the Air Force Council approved the PDS concept in the spring of 1986.[81] Air Staff planners then issued the PMD for the PDS on 14 May 1986.[82]

Unfortunately, budgetary constraints prevented acquisition of a new or specially designed plane for the PDS mission. Understanding this constraint, PACAF proposed that MAC send six C-12Fs from the CONUS to Kadena AB for the PDS while maintaining the present Pacific OSA fleet of two C-21As and six C-12Fs. Although MAC felt the C-12Fs were not optimum for the PDS role, planners acknowledged the planes "could meet some of PACAF's requirements."[83]

At the end of May 1986, MAC responded to the PMD by suggesting several aircraft moves. To give PDS six C-12Fs, MAC planned to end C-12F operations at Langley AFB and move all four of Langley's C-12Fs to Kadena AB. However, MAC also wanted to close the OSA detachment at Kadena AB and use those two C-12Fs for the other two PDS planes. Recognizing the loss of the two OSA planes would hamper PACAF support, MAC planned to send another C-21A to Yokota, bringing the 1403d MAS up to three C-21As. In addition, MAC would make up for the four C-12Fs transferred from Langley AFB by sending two C-21As there. To provide the additional C-21As to Langley and Yokota, MAC would close the four-aircraft detachment (Det 4, 1400th MAS) at Kirtland AFB, New Mexico. The other C-21A from Kirtland would go to Peterson AFB, Colorado, to make up for lost support in the western mountain region. MAC chose the Kirtland detachment for closure because it ranked next to last in C-21A utilization while Langley's C-12Fs were also next to last in utilization for the turboprops.[84]

On 3 November 1986, Headquarters USAF/PR directed MAC and PACAF to implement the PDS using existing aircraft. The aircraft transfers and unit realignments proposed by MAC (above paragraph) were approved by the Air Staff and MAC published the programming plan for PDS on 31 March 1987.[85] The plan directed Det 2, 1403d MAS, to inactivate on 1 October 1987 and be replaced by the new 13th MAS on the same date. In addition, the Kirtland unit was to inactivate on 15 December 1987 and all aircraft moves were to be completed by 31 December 1987. Based on expected use, the programming plan directed that all passenger seats be removed from the PDS planes and remain cargo configured as long as they remain in the PDS.[86] In addition, probable wartime utilization rates required a higher than normal crew ratio—2.0—vice the 1.13 to 1.5 ratios in regular OSA units.[87]

Dead at Birth. Unfortunately, all the planning for PDS was for naught. Congress was not happy with the Air Force's plans to expand the EDS in Europe and the legislators' wrath extended to the PDS. Consequently, Congress rejected PDS funding in the FY 1988 Omnibus Continuing Resolution Appropriation. In addition, the bill specifically prohibited the Air Force from using the C-12Fs as PDS aircraft or from operating the PDS at all. Left with little choice, MAC put the PDS C-12Fs back in the OSA role but left the four extra planes at Kadena AB.[88] Air Force attempts to regain congressional approval proved futile and the PDS mission was never realized.

The 1988 General Accounting Office Report

The Senate Committee on Armed Services' Report on the National Defense Authorization Act for fiscal years 1988 and 1989 requested the General Accounting Office (GAO) to provide a report to the Senate and House Armed Services Committees concerning the use of military aircraft versus commercial transportation for senior military and civilian DOD official travel needs. As directed, the GAO evaluated (1) whether the services were following current DOD policies and procedures for using OSA versus commercial aircraft and (2) whether using OSA was cost effective compared to commercial air.[89] The GAO looked at OSA programs in all branches of service but limited the review to small OSA aircraft including the Air Force's C-12Fs and C-21As.[90] The GAO review did not address wartime readiness requirements.

Findings and Recommendations. The GAO report listed three principle findings. First, despite similar audit findings in the past, the services still were not following DOD policy guidance in several areas including cost justification and priority assignments. Second, the GAO cited weak "management control and oversight" over OSA operations including instances of overstating requirements to help ensure service as well as uneconomical flights caused by low passenger utilization. Third, the services' (particularly the Air Force's) OSA programs were still not automated nor very organized, resulting in cost ineffectiveness.[91]

The GAO made four specific recommendations to the Secretary of Defense to "achieve greater management control and economy and efficiency" over OSA operations.[92] First, the service secretaries should ensure service implementing instructions were consistent with DOD criteria. Second, the services should (1) schedule OSA training missions that increase passenger utilization as much as possible and (2) eliminate overscheduling to ensure service. Third, the Air Force should automate its OSA scheduling system to interface with the Navy's OSA system as well as the Army's system when it became fully automated. Fourth, the SECDEF should "consider consolidating all operational support airlift scheduling at a single automated scheduling activity."[93]

MAC defended the perceived OSA cost ineffectiveness with the same arguments as before. Since OSA's primary peacetime purpose was pilot seasoning, the flights were going to fly regardless of the passenger loads so any official travel passengers that flew on the OSA planes vice commercial airlines were

saving the government money. While not arguing that logic, the GAO noted the important task was to increase passenger utilization on the OSA flights. MAC/DOOF representatives told the GAO they did not perform cost analysis for the missions but tried to schedule missions so as to maximize the number of passengers on OSA flights. The GAO did not agree, showing the Air Force's OSA passenger utilization rate for FY 1987 was a dismal 24 percent. By replacing the manual scheduling system with an automated one, the GAO felt MAC/DOOF could more effectively schedule OSA missions and better use available seats without sacrificing readiness training. In addition, an automated system could tie into the Navy's computer system (which the Army was in the process of adopting) and allow all DOD OSA aircraft to carry passengers from all services, thereby increasing seat utilization.[94]

As a further step, the GAO suggested the DOD consolidate all OSA scheduling at one central location. The report cited a one week period in the Washington, D.C., area showing that 17 of 81 OSA missions could have been eliminated by consolidating passengers from one plane onto another without significantly changing the mission times or itineraries. Potential savings amounted to about $26,000. While acknowledging individual services might lose control of their aircraft on some days, the GAO said "OSA is basically a service that should be fully used to ensure both training and travel economies [and that scheduling activity consolidation] may be a better way to achieve these goals."[95]

The Response. The DOD response said the Air Force did have an automated scheduling capability but "the Air Force has previously elected not to fully use its system to produce the operational schedule."[96] However, the DOD would direct the Air Force to reconsider its decision.[97] In fact, MAC/DOOF did have an automated system for receiving support requests but either could not or would not use it for scheduling the OSA planes.[98] Despite the GAO report, by 1993 the Air Force still had not implemented a fully automated OSA scheduling system.

The DOD also argued that DOD-wide OSA scheduling consolidation would "not contribute to the Services' ability to schedule requirements during wartime when forces deploy from peacetime bases."[99] The response gave no justification for such a statement and, considering the experiences during Operations Desert Shield and Desert Storm (chapter 5), consolidation might well have provided greater efficiencies and increased support capabilities. The GAO showed where consolidation (and automation) could help in peacetime. Such greater efficiencies could also provide increased wartime capabilities where OSA resources would probably be more scarce and requests more plentiful. Consolidation was considered but rejected in 1993 and is discussed further in chapter 5.

Airspace Management

In late 1988, the commander of the 322d Airlift Division (ALD) at Ramstein AB, Germany, Maj Gen William H. Sistrunk, met with the Gen Sir Patrick

Hind, commander in chief of Great Britain's Royal Air Force. Among the topics they discussed were airspace management and its potential problems during a contingency or war in Europe. Their talks provided a wake-up call and touched off an airspace management effort within MAC to improve the ability of the command's aircrews to operate in a complex airspace structure during contingencies or war. After all, MAC aircrews could not rely upon normal civil air traffic controllers and procedures during a war or combat contingency. Instead, the crews would have to depend on unique procedural controls based on time, altitude, and distance—something few aircrews understood, much less practiced.[100]

A New Branch. As 1989 began, MAC had no airspace management specialist officially assigned to the MAC DCS Operations staff. However, with the new emphasis, MAC created the Airspace Management Branch (DOOXT) within the Contingency and Exercise Division (DOOX) of the operation's staff with a captain and civilian assigned to the new branch. The new office broke ground in several areas. First, DOOXT was the only such office at any operational command headquarters in the Air Force. Second, the new branch dealt with airspace management operations and programs during contingencies and war whereas previous activities had concentrated solely on peacetime issues. The new efforts paid off fast with greatly increased MAC participation and integration during the command post exercise, WINTEX-CIMEX 89, held in Europe.[101]

A New Committee. To assist DOOXT with developing and implementing airspace management initiatives, MAC created the Airspace Management Committee in the late spring of 1989. Chartered to meet quarterly, committee members represented a wide variety of offices within the MAC headquarters' staff. The committee held its first meeting on 15 June 1989 and discussed the paucity of current training for MAC aircrews in wartime airspace procedures. MAC training (DOT) suggested it would take two years to build an aircrew training package on safe passage procedures, but was tasked to provide an initial aircrew education package within six months. Meanwhile, MAC standardization and evaluation (DOV) noted an aircrew guide was a difficult proposition because the war plans often did not match with airspace management procedures. Still, the AMC tasked DOV to work with DOOXT on aircrew guide development. Route development between airlift offload locations within Europe was also discussed with an eye to including the routes into airspace control plans. Finally, the meeting concluded with a caution not to concentrate on Europe while forgetting about the other theaters' needs.[102]

Also as a result of that first Airspace Management Committee meeting, the MAC DCS Operations soon released an extensive list of publications required "to ensure proper planning and conduct of operations."[103] Emphasizing the importance of the airspace management program, the DCS Operations said "aircrews must have complete and in-depth knowledge of procedures to safely fly from CONUS to and within European airspace during times of tension and war."[104]

At the 22 December 1989 committee meeting, attendees learned that safe passage training had been deleted from the annual requirements as part of a CINCMAC-directed cut in aircrew ground training. Committee members agreed to work to reinstate safe passage training.[105] Meanwhile, planners worked on a classified reference guide for aircrew in-flight use as well as a procedural checklist for employing in European airspace during hostilities.[106]

It is not clear whether the guide and checklist were ever developed, much less released to the OSA aircrews based in Europe. However, those crews, as well as the many CONUS OSA aircrews who could expect to deploy to Europe during a crisis, had just as great a need to learn airspace control procedures as did MAC's strategic and tactical airlift crews. Also, it could not be confirmed as to whether or not MAC ever developed similar procedures, guides, or checklists for the Pacific theater. Certainly MAC's Pacific theater OSA aircrews never received any such publications or specific training. Although all MAC OSA crews received limited, generic training in Wartime Safe Passage procedures during their annual ground currency training, as of May 1992 AMC did not teach specialized airspace control measures such as corridor or silent running procedures to any of its OSA aircrews.[107]

Combat Aircrew Training

In the early 1980s, MAC developed the combat aircrew training program "to improve the survivability of strategic airlifters on wartime or peacetime missions into potentially hostile areas."[108] To support the program MAC created the CAT School (CATS) at Nellis AFB, Nevada, in 1983. Although a nonflying course, CATS was designed to train instructor pilots and navigators as well as intelligence personnel in threat analysis, mission planning, and tactics. In turn, the newly trained personnel were to return to their units, develop in-unit CAT programs, and train the rest of the strategic airlift force. Built around a strong staff of well-qualified instructors, CATS was very successful. Unfortunately, the in-unit programs have suffered for a variety of reasons including insufficient resources and lack of consistent, high-level emphasis.[109]

Renewed Emphasis Leads to a Training Development Guide. When General Cassidy became CINCMAC in 1986, he expressed his strong desire to get CAT back on track.[110] Responding to the CINC's tasking, the Directorate of Training (MAC/DOT) produced a training development guide (TDG) entitled "Airland Combat Aircrew Training Program." Published on 31 October 1987, the MAC DCS for Operations, Maj Gen James D. Kellim, set the tone in the TDG's foreword:

> The CAT program is the cornerstone of successful mission accomplishment. The diverse role of airlift changes throughout the spectrum of conflict, requiring aircrews to perform in an ever-changing environment. The actions required of MAC to operate during civil disobedience, terrorist/guerrilla actions, conventional warfare, and beyond, differ markedly from today's peacetime channel flights. . . . To answer the needs of the mission, Headquarters MAC/DOT has structured the CAT program

to provide realistic training to prepare each crew member to fly and survive in a threat environment.[111]

The CAT program consisted of two phases. Phase I concentrated on intelligence preparation, mission planning, crew coordination, and the flying skills required to operate in the visual flight rules (VFR) combat environment. Phase II was intended to take the Phase I familiarization skills and turn them into operational capability. However, the airland CAT TDG only addressed Phase I training.[112]

CAT program managers in the units were to develop mission planning/execution scenarios of varying difficulties based on the themes mentioned in General Kellim's foreword. Enemy threats and friendly support varied by scenario. The goal for the CAT students was to analyze the mission and threat, take appropriate action, and translate mission directives into a proposed route and profile. Chemical threats could be included so long as training did not include use of chemical defense ensemble (CDE) equipment.[113]

Flying sorties were planned to include maneuvers and procedures (according to the aircrafts Dash 1 Flight Manual) for the three phases of any mission: departure, en route, and arrival. For the departure, crews would analyze threats in the airfield area and then accomplish climb out procedures to decrease aircraft susceptibility and improve survivability. En route procedures covered a variety of areas. The goal was to limit probability of detection by enemy forces by proper threat avoidance planning and flying at low altitudes. In addition, the TDG required crews to demonstrate their abilities to interface with friendly command and control systems including airborne warning and control system (AWACS). Crews also had to show they could perform maneuvers to degrade surface-to-air missiles (SAM), antiaircraft artillery (AAA), enemy aircraft (guns or missiles), electronic countermeasures (ECM), and chemical warfare measures. Upon arrival, aircrews were to illustrate their abilities to descend/ingress into airfields within a threat area and perform engines-running offloads/onloads.[114]

In addition to the one-time ground training, the TDG required active duty pilots and navigators to complete one CAT sortie semiannually. The minimum CAT sortie consisted of intelligence briefing, mission planning, and a flight with at least a 30 minute low-level, VFR route. Pilots also needed two threat avoidance departures and arrivals as well as two accuracy landings every six months.[115]

As General Kellim said in the foreword, and as the CAT requirements clearly indicate, the TDG was developed for strategic airlift forces for airland, not airdrop, missions. Perhaps the planners assumed MAC's airdrop C-130 and C-141 aircrews were generally trained well beyond the CAT requirements. However, the idea of integrating well-developed intelligence scenarios, concentrated mission planning to avoid known or anticipated threats, and well-defined techniques to defeat or degrade any encountered threats was, unfortunately, new to most aircrews. Therefore, the CAT program was soon expanded to include the C-130 fleet as well as C-141 airdrop crews. Unfortunately, the TDG did not include OSA aircrews in the CAT program.

After the TDG's release, MAC/DOT instituted an ambitious training schedule in a message to all MAC numbered Air Forces and wings. All instructor and flight examiner pilots were to be CAT certified by 31 December 1987. Active duty pilots and nonairdrop navigators were to be current to Phase I levels not later than 30 June 1988 with all other crew members current by 31 December 1988. The catch was that until more funds could be found, MAC could only train crews to the Phase I familiarization level.[116]

The Tactical Training Initiatives. Responding to suggestions at the 1987 VOLANT RALLY MAC Commanders' Conference that MAC needed to improve combat tactics, General Cassidy put together a Combat Tactical Training Tiger Team in November of 1987 to assess training and make recommendations. Among its many proposals, the Tiger Team called for MAC planners to develop a "realistic, low-level, combat aircrew training program, not only for the airdrop force, but the airland force as well."[117]

In February 1988, the CINC commented that the resulting CAT "concept looks good [but what was needed was] a more concrete plan to move the concept from theory to practice" including a plan to merge such activities as CAT School, in-unit CAT programs, C-5 training, and currency items in with simulator missions, training profiles, and flying hours.[118] The MAC DO, General Kellim, responded in a staff summary sheet by outlining a two-phase program known as the tactical training initiative (TTI). Phase I of the TTI was built around four milestones during 1988 including building profiles and maneuvers, determining sortie length and contents, validating safety and standardization, and determining the proper mix of simulator and flying hours. Phase II would be an integration of all current combat-oriented programs including CATS, the Advanced Airlift Tactics Training Center (AATTC), the Joint Readiness Training Center (JRTC), Red Flag, and other flag exercises. According to General Kellim, "our goal is a combat ready force which is trained the way we will fight."[119] The general concluded by saying: "We are going to use all available assets to focus the command on its wartime readiness. We consider this to be our number one priority."[120]

Attached to General Kellim's comments was a background paper outlining the tactical training initiatives. The paper noted that airdrop crews, especially C-130 crews, already were ahead of the game and their training program would only "require modification to interface CAT in a more positive way."[121] Meanwhile, MAC understood that "strategic airland *and OSA* crews lack much of the combat training. Initially, much of our efforts will be focused on them."[122] Finally, MAC had acknowledged the OSA crews needed CAT training as much as anyone else. Unfortunately, the background paper went on to mention specific programs for MAC's C-141s, C-5s, and C-130s but not for the OSA aircraft. So, when the paper concluded by saying "as our programs evolve and combat training becomes an integral part of everyday life, we'll then be training the way we will fight," the question lingered as to where OSA fit into MAC's CAT program.[123]

Flying-Hour Cuts Restrict Training. In April 1988, budget cuts reduced flying training hours threatening the CAT program. Rather than retreating

from the issue, General Kellim told MAC officials that "while flying hours were cut, the program was not terminated."[124] Indeed, the "CINCMAC directed a full-time task force to put teeth into the CAT program because this will be the mission qualification for MAC aircrews."[125] Therefore, the CAT program would be fully implemented on 1 October 1988 and MAC would pursue new and greater ways to incorporate CAT throughout the command. Although the flying portion of the CAT program for airland crews was placed on hold, the ground training would continue and be stressed. Meanwhile, "airdrop crews should continue to integrate CAT procedures into their daily operations" and all airland aircrews should be ready to resume the flying program when allowed.[126] Although the message did not specifically mention or include OSA, it did not exclude OSA either.

Unfortunately, the truth was that CAT for OSA was not a reality. On 29 September 1988, the MAC Combat Tactics Division (MAC/DOXT) released its Combat Tactics Project Report #1 covering the progress of key tactics projects over the previous two years. Of the 40 projects reviewed, the only OSA project mentioned was entitled "Assisting the 375 AAW [Aeromedical Airlift Wing] and OSA Units in Developing Their Tactics Programs."[127] According to the report "some of these [OSA] aircraft are beginning to develop a tactical, wartime mobility capability and role to which *very little thought* has been given," and mentioned the use of C-21As in such exercises as Flintlocks 87 and 88.[128] The author also noted that no programs were under way, but the 375th AAW was developing a CAT package. In turn MAC/DOXT would review the plan and place continuing emphasis on the overall project.[129]

At the end of 1988, MAC released the Combat Aircrew Training Aircraft Commander Syllabus as a result of a MAC CAT workshop. In its foreword, General Kellim said the syllabus was "developed as a tool for strategic aircraft commanders in 500-ft Day/Night Combat Aircrew Training (CAT) procedures."[130] *Strategic* meant C-5 and C-141 aircrews, not OSA pilots. Thus, as 1988 ended, the OSA CAT program was, at best, in its infancy with little command emphasis.

Program Rejuvenation. In an April 1989 message from the MAC DO and TR to their counterparts in MAC's numbered Air Forces and wings, MAC approved the C-5 and C-141 CAT program and gave detailed guidance on implementation. OSA was not mentioned until near the end of the 14-page message: "C-12/C-21 units may continue CAT ground training activities [however] C-12/C-21 units are not authorized to fly any type of CAT profiles until appropriate procedures are established and validated by Headquarters MAC."[131] Still, on 11 April 1989, the MAC DO told the 375th AAW to proceed with development of a CAT training package for its OSA aircrews.[132]

One important reason for the delay was that the CLS companies question what CAT sorties would do to the aircraft in terms of structural fatigue and subsequent maintenance problems.[133] Therefore, Air Force logisticians at Tinker AFB, Oklahoma, met with representatives from Learjet and Beech to discuss the problem. Based on the preliminary meetings, Tinker personnel announced in June 1989, "we believe the short-term effect of these new [CAT]

profiles on airframe service lives will be minimal [and that the CAT] profiles could be used for many years before the design lives of these aircraft are reached."[134] However, to be safe, Tinker officials would contract with Beech and Learjet to perform long-term fatigue analysis on the planes based on CAT sortie usage.[135] After clarifying the intent of the Tinker message, Headquarters MAC/DOTS determined MAC was "authorized to conduct CAT flight validation and begin initial crew force qualification without modification to current CLS contract[s]."[136]

Unfortunately, despite the Tinker message and Headquarters MAC/DOTS clarification, the OSA CAT program still did not get off the ground. In his end of tour report in early September 1989, the outgoing commander of Twenty-third Air Force, Maj Gen Robert B. Patterson, noted that although his command had "obtained a wartime role for . . . C-21/C-12 operational support airlift (OSA) aircraft . . . we still have not . . . allowed the OSA crews to begin their CAT profiles."[137]

The Program Gets the Green Light. Perhaps General Patterson's comments had some effect because, on 4 October 1989, MAC gave approval to the 375th AAW to begin the wing's proposed OSA CAT validation program for CONUS C-12F and C-21A aircrews.[138] A few months later, MAC gave the go-ahead for most OSA crews to begin CAT training but not before adding a bit of confusion by changing the name of the CAT program to the tactical VFR training (TVT) program.[139]

Just two days into 1990 MAC signaled its OSA units to begin a modified CAT program.[140] The OSA TVT program contained most of the CAT program elements but, due to concerns about structural service life, MAC officials made several changes to the original 375th AAW OSA CAT program proposal. According to MAC, the new TVT program included the CAT ground training, threat analysis, and low-level planning, as well as actual low-level VFR flying, random VFR departures and approaches, and threat avoidance maneuvers. However, low-level for OSA meant 1,000 feet above ground level (AGL) instead of 500 feet as in the other MAC aircraft programs.[141]

In addition to the ground training, aircraft commander certification required one-day and two-night flying training missions to include demonstrating low-level and threat avoidance maneuvers. Semiannual currency requirements included two low-level sorties as well as two threat avoidance departures and approaches each, though not necessarily on the same mission. Failure to maintain currency did not require pilots to be grounded, but every effort was to be made to ensure they quickly regained currency. In addition, units were to qualify new crew members within six months of their arrival.[142]

MAC told the overseas OSA units to use the 375th AAW CAT materials as a starting point for developing their own unit TVT programs and training guides. In addition, MAC OSA crews in Europe were prohibited from flying low-level routes until questions concerning low-level airspace use were resolved.[143]

Information is sketchy on just how far OSA units progressed in implementing their TVT programs. The main problem the units faced was limited train-

ing time. Many units were hard-pressed to complete normal pilot proficiency and basic qualification currency training with their limited training hours. Therefore, adding dedicated TVT sorties was often difficult and normal operational missions did not often lend themselves to TVT profiles.

MAC only allotted 15 percent of total OSA time for dedicated training missions (under unit commander control) with the other 85 percent given to airlift missions tasked by MAC/DOOF. The imbalance seemed to contradict the very essence of OSA's purpose: wartime readiness. If MAC was really serious about preparing OSA for war, more flying hours could have been diverted from airlift missions and devoted to unit dedicated training missions, specifically for TVT flights. Unfortunately, such a change did not occur. Thus, as the 1990s began, OSA faced a question of priorities—wartime readiness training versus peacetime by-product airlift.

Flying Hours and Crew Ratios

As federal budget reductions hit the Air Force in the late 1980s, OSA took cuts as well. However, the problem was not as simple as merely reducing missions and airlift support. Since MAC pinned much of its pilot seasoning program on OSA, flying hour reductions meant one of three negative consequences. MAC could either accept fewer new UPT graduates (known as first assignment pilots—FAP), lengthen the FAPs' tour length beyond three years, or give the FAPs less than the required number of flying hours necessary to upgrade to aircraft commander when the FAP transitioned into a major weapon systems aircraft at their next assignment.

In 1986 the authorized CONUS OSA crew ratio was still only 1.13 (Europe OSA was approved at 1.5). However, previous over absorption of FAPs had forced the Air Staff to allow overmanning in the units up to a 1.5 crew ratio. MAC continued to try to convince the Air Staff to permanently validate the higher crew ratio based on needs of the FAPs as well as wartime manning requirements.[144] In an October 1986 message from CINCMAC to Headquarters USAF/PR/XO, MAC formally requested the 1.5 crew ratio along with an increase in the CONUS flying rate from the current 59 hours (per plane per month) up to 65-70 hours (Europe and Pacific OSA units were already flying about 75 hours per month based on theater requirements). The message also asked for a commensurate increase in annual FAP absorption rate from the current 59 to 65-70 per year. However, Headquarters USAF/XOO personnel indicated there would be no additional money or manpower to support the request without MAC offering some offsets to fund the requests.[145]

MAC planners worked to revise the requirements and, in late December 1986, determined the 1.5 crew ratio necessitated an increase in the utilization rate to 66 hours per plane per month. The estimated costs of such an increase came to $4.2 million per year. However, at the end of 1986, the OSA flying hour increases remained unfunded.[146]

Over the next two years MAC made no forward progress towards increasing either OSA flying hours or crew ratios. Due to congressional budget decisions,

OSD directed a nearly $12 million reduction in funding for MAC's operations and maintenance (O&M) flying-hour program in FY 1988. One of MAC's responses was to reduce overseas OSA flying hours by roughly 20 percent, bringing the overseas utilization rates in line with CONUS rates—around 60 hours per plane per month.[147] Meanwhile, cost estimates grew $13 million in two years (from $4.2 million in December 1986 to $17.2 million in December 1988) just to increase the CONUS OSA crew ratio to 1.5 and absorb 13 more FAPs. Still, MAC did not give up and again asked the Air Staff to approve the increased crew ratio in December 1988.[148]

Efforts finally paid off in 1989 when the Air Staff approved the CONUS 1.5 crew ratio and increased flying hours. However, the higher flying time level was short-lived as the Air Staff again reduced the OSA flying-hour program for FY 1990. Flying hours programmed and actually flown from 1986 through 1991 are shown in table 21.

The increase in flying hours in FY 1989 reflects successful efforts by theater commanders to maintain higher flying hour authorizations for their OSA units. Arguing that alternate travel methods were either not available or prohibitively expensive, PACAF and USAFE convinced the Air Staff to reverse MAC's 1988 decision to cut overseas OSA hours. As a result, utilization rates overseas stayed well above those for CONUS units through the end of FY 1991.[149]

Table 21

OSA Flying Hours: 1986-1991

	C-12Fs		C-21As		Total	
Year	Programmed	Flown	Programmed	Flown	Programmed	Flown
1986	24,382	27,246	55,504	50,226	79,886	77,472
1987	26,029	27,472	55,622	55,231	81,651	82,703
1988	24,255	23,652	51,634	51,143	75,889	74,795
1989	29,616	28,477	55,260	54,847	84,876	83,324
1990	27,000	25,242	49,728	50,745	76,728	75,987
1991	27,149	25,377	49,728	50,090	76,877	75,467
Totals	158,431	157,466	317,476	312,282	475,907	469,748

Note: Does not include formal training school hours for 1375th FTS at Scott AFB, Illinois. 1375th FTS C-21A hours programmed at 2,400 per year (1986-1991); C-12F hours programmed at 1,205 (1986), 1,200 (1987), and 1,594 (1988-1991).

Source: *History of USAF Flying Hours: FY 1986* through *FY 1991.*

The 1980s Draw to an End

During the late 1980s, several events led to transfers of aircraft between OSA units. The 1985 establishment of Det 5, 1400th MAS at Nellis AFB, Nevada, and the 1987 transfers associated with the ill-fated PDS efforts have

already been mentioned. However, in early 1987 a tragic occurrence led to more moves.

On 14 January 1987, during a pilot proficiency training mission, a C-21A from Det 4, 1402d MAS at Eglin AFB, Florida, crashed at Dannelly Field (Montgomery, Alabama) killing both pilots.[150] The loss reduced Eglin's unit to just three aircraft—considered an inefficient and uneconomical level by MAC planners. Therefore, over the next six months MAC officials considered a number of options to replace the lost aircraft including purchasing a new jet, closing or combining detachments, and transferring a C-21A from a large (more than four aircraft) unit. In the end, MAC opted for an interim solution consisting of diverting one of the two C-21As originally destined for transfer from Kirtland AFB to Langley AFB (in late 1987 as part of the PDS transfers) to Eglin AFB instead. MAC planners felt that the 12 OSA planes at Andrews AFB in nearby Maryland could be used to make up any lost support for Langley.[151] General Cassidy echoed the decision and reasoning in a letter to the Tactical Air Command (TAC) commander, Gen Robert D. Russ, on 30 June 1987. In addition, General Cassidy told General Russ that MAC analysis personnel would "embark on a long-term study of our OSA basing requirements [and would] also provide a current objective assessment of our mission requirements."[152] As a result of the decision, in late 1987 Kirtland's four C-21As all went to different locations—Yokota, Peterson, Langley, and Eglin.

Meanwhile, the fifth C-12F originally planned for the unit at Nellis AFB in FY 1986 was delayed. Although MAC officials knew the TAC DCS Operations still wanted a fifth plane for Nellis support, the transfer still had not occurred by late 1986.[153] In early 1987, the Air Staff was still staffing the package for the additional plane.[154] However, the TAC request never received enough support from MAC and Air Staff officials so the Nellis detachment never did receive the additional plane.

In the same time frame, the commander of the Alaskan Air Command, Lt Gen David L. Nichols, informally requested an additional C-12F for the OSA unit at Elmendorf AFB.[155] Although agreeing that AAC needed another C-12, General Cassidy told General Nichols that C-12s were "becoming an increasingly scarce resource [and that] a validated shortfall already exists" in OSA's wartime capability which would be worsened by another C-12F transfer. Still, General Cassidy said his staff would assist if AAC decided to pursue the issue.[156]

Another request stirred the OSA pot in the late 1980s. The loss of Eglin's C-21A put a pinch on SOUTHCOM's OSA support to and from Howard AFB in Panama. To make up for the shortfall, SOUTHCOM pursued the acquisition of a dedicated C-21A to be permanently based at Howard.[157] Since the six C-12Fs at Kadena AB were switched from PDS back to the OSA role in late 1987, MAC planners considered the additional C-21A sent to Yokota as part of the PDS deal to be excess to PACAF's OSA needs. Therefore, MAC subsequently transferred that third C-21A from Japan to Panama in 1989 and reassigned it to the 310th MAS under MAC's 61st MAG at Howard AFB.[158]

A 616th Military Airlift Group C-12F Huron prepares to take off from Elmendorf AFB, Alaska, on a supply mission

Several other minor changes affected the OSA force structure in the late 1980s. The Air Force transferred one C-12F from the active fleet to the Air National Guard at Fort Smith, Arkansas. In addition, the Air Staff took control of one of the 1402d MAS's C-21As at Andrews AFB, Maryland, for a few years to provide dedicated support to the Air Force Chief of Staff. This plane returned to MAC control in the early 1990s.[159]

With all the OSA aircraft transfers, the basing at the end of 1989 differed markedly from the original unit assignments. A little more than five and one-half years into the C-12F/C-21A era, MAC had closed three of the original 15 CONUS C-21A units, created a new C-12F squadron in the Pacific and new C-12F detachment in the CONUS, and provided SOUTHCOM with its first dedicated OSA C-21A. Table 22 shows the OSA basing as of 31 December 1989.[160] One other significant event occurred towards the end of the 1980s. On 1 August 1989, the Air Force released a revised AF Regulation 60-23, *Operational Support Airlift (OSA) Management*. Superseding the 1981 edition, the new version specifically recognized OSA's pilot seasoning role in its definition of the OSA mission:

> Air Force-directed missions flown during wartime, contingencies, or peacetime. These missions include the priority movement of personnel and cargo with time, place, or mission-sensitive requirements. During peacetime, OSA aircraft provide low-cost flying experience for recent Undergraduate Pilot Training (UPT) graduates and, as a by-product, transportation for official business travel of government em-

ployees. Low-cost seasoning of UPT graduates and maximizing passenger travel are mutually obtainable goals.[161]

Table 22

OSA Basing as of 31 December 1989

Base	C-21As	C-12Fs
CONUS:		
Andrews (1402 MAS)	7	4
Langley (Det 1, 1402 MAS)	6	
Maxwell (Det 3, 1402 MAS)	4	
Eglin (Det 4, 1402 MAS)	4	
Scott (1401 MAS & 1375 FTS)*	10	3
Offutt (Det 1, 1401 MAS)	9	
Wright-Patterson (Det 2, 1401 MAS)	5	4
Barksdale (Det 3, 1401 MAS)	5	
Peterson (Det 4, 1401 MAS)	6	
Norton (1400 MAS)	4	4
McClellan (Det 1, 1400 MAS)	4	
Randolph (Det 2, 1400 MAS)	5	
Nellis (Det 5, 1400 MAS)	—	4
Subtotal	69	19
Overseas:		
Elmendorf (Det 1, 616 MAG)		4
Yokota (1403 MAS)	2	
Clark (Det 1, 1403 MAS)		2
Osan (Det 3, 1403 MAS)		2
Kadena (13 MAS)	6	
Howard (310 MAS)	1	
Ramstein (58 MAS)	3	6
Stuttgart (OL-A, 608 CAMS)	3	—
Subtotal	15	14
Worldwide Totals:	84	33

*Scott totals include 1401st MAS—seven C-21As and 1375 FTS—four C-21As/three 3 C-12Fs.

Source: *History of Military Airlift Command: 1 January–31 December 1989* (U), 102-4. (Secret) Information extracted is unclassified.

Given the disproportionate amount of verbiage dedicated to peacetime pilot seasoning and passenger support, it seems clear that the wartime mission was not OSA's primary reason for existence. More disturbing from a contingency support viewpoint, the regulation focused almost entirely on MAC's peacetime validation, request, and scheduling procedures for CONUS OSA. The regulation made no mention of theater procedures, either in peacetime or

wartime, including who would exercise operational control or how deploying units would interface with and theater scheduling procedures.[162] Such inadequacies caused problems for the C-21A units that deployed to the Persian Gulf in 1990 and are discussed in chapter 5.

The Early 1990s and Divestiture

As OSA units deployed to the Persian Gulf in August and September of 1990 to support Operation Desert Shield, the Air Force faced major changes. Continuing budget decreases forced Air Force planners to consider significant force reductions. In 1991, fresh from victory in the war and with a new chief of staff, the Air Force embarked upon a major renovation in organization, philosophy, and force structure. By 1992, these changes led to alterations in OSA as overseas units transferred from AMC (MAC's successor) to the theater air component commands. This divestiture continued in 1993 as the CONUS OSA units switched from AMC to the bases' host MAJCOM. With the important exception that AMC still centrally schedules the CONUS force, OSA has returned to the pre-1975 era of multiple command OSA ownership.

Headquarters Reorganization and the Gulf War

In the early 1990s, one of the first areas that budget cuts affected was manpower. In turn, MAC looked at ways to streamline its operations to require fewer personnel. As a result, in the summer of 1990 MAC undertook several initiatives to reorganize its headquarters, one of which directly affected OSA.

During a management structure review briefing on 27 July 1990, the CINCMAC, Gen Hansford T. Johnson, "directed the separation of HQ MAC/DOOF from the MAC staff and the creation of a direct reporting unit under the HQ MAC/DO."[163] As a result, the 1440th Military Airlift Support Squadron (MASS), also known as OSA Center (OSACENT), replaced MAC/DOOF on 1 September 1990. The conversion's purpose was to remove "the execution-oriented functions [of MAC/DOOF] from the MAC management headquarters structure [while] the 1440 MASS will exercise autonomy in executing its mission, while continuing to receive operational guidance from HQ MAC/DO."[164]

As luck would have it, this transformation took place at a most inopportune time. Less than a week after General Johnson's decision, Iraq invaded Kuwait on 2 August 1990, touching off the US and United Nations response known as Operation Desert Shield. Five days later, President George Bush issued the deployment order sending the first US troops to the Persian Gulf region.[165] The OSA unit from Barksdale AFB, Louisiana, soon mobilized and deployed to the region, followed by the Maxwell AFB, detachment. The wartime experiences of these two C-21A units is discussed in length in chapter 5.

Ice and Fire

Citing increased needs for radar site support, 11th Air Force based at Elmendorf AFB, Alaska, requested yet another C-12F. MAC responded by telling PACAF to make any such move from other Pacific-based OSA resources. As a result, the 13th MAS at Kadena gave up one of its six C-12Fs in early 1991 to the OSA unit in Alaska. However, the 13th MAS did not have to wait long to get more planes.[166]

In June 1991, the Mount Pinitubo volcano erupted in the Philippines, quickly covering Clark Air Base on Luzon Island with several inches of ash and mud. The two C-12Fs belonging to Detachment 1, 1403d MAS at Clark temporarily moved operations to Cubi Point Naval Air Station, less than 50 miles southwest of Clark. After a few days it became apparent that the ash would also limit use of Cubi Point so the planes moved to Kadena AB on Okinawa, roughly four hours northeast. With the subsequent US decision not to reopen Clark, PACAF received permission from MAC to permanently add the two aircraft to the 13th MAS at Kadena.[167]

After all the transfers, PACAF controlled seven C-12Fs at Kadena, two C-12Fs at Osan AB, Korea, five C-12Fs at Elmendorf, and the two C-21As at Yokota. Unfortunately, the move of Thirteenth Air Force from the Philippines to Guam meant PACAF had a numbered air force with long-range OSA support needs but no dedicated OSA resources. MAC nixed efforts to get additional C-21As assigned to the Pacific but did authorize a substantial increase in flying hours for the two C-21As at Yokota to provide extra support for Thirteenth Air Force missions.[168]

In an unrelated move, the OSA detachment at Nellis AFB was deactivated in 1991 because the mission it supported was transferred elsewhere. The four C-12Fs were relocated to other CONUS C-12F locations—two to Andrews AFB and two to Wright-Patterson AFB.[169]

Divestiture—Phase I

One of the many outgrowths of the lessons learned during the Persian Gulf war was a move to reshape and reorganize the entire Air Force. Led by Air Force Chief of Staff Gen Merrill A. ("Tony") McPeak, the 17-year-old single, integrated airlift system under the Military Airlift Command gave way to a return to older philosophies. Among these theories was the concept that the theater commanders should command and control all forces based in or deployed to their theaters. MAC forces based in the overseas theaters violated this principle of total theater command. As a result, General McPeak ordered MAC to divest itself of forces stationed outside the CONUS.[170]

Although forces supporting MAC's intertheater airlift (such as C-141/C-5 en route maintenance and aerial port) were excluded from the shift, the overseas intratheater airlift forces (OSA and C-130s) transferred to the theater MAJCOMs. Therefore, on 1 April 1992, MAC's overseas C-130 units transferred to the theater air component commands. Just two months later, OSA units in the Pacific and Europe followed suit, switching from MAC to PACAF

or USAFE on 1 June 1992, the same day Air Mobility Command activated, replacing MAC.[171]

The OSA move gave USAFE full command and control over three C-21As and six C-12Fs, all at Ramstein AB in Germany. EUCOM still controlled the three C-21As at Stuttgart but now the aircrews were assigned to USAFE instead of MAC. In the Pacific, PACAF regained the complete command and control of theater-assigned OSA forces it so grudgingly gave up in the mid-1980s. With air forces in Alaska now under PACAF, the command owned 14 C-12Fs and two C-21As. Meanwhile, the single C-21A at Howard initially stayed under AMC since the supporting air component command was Twelfth Air Force, based in the CONUS. Although the plane was physically stationed in Panama, AMC continued to rotate TDY aircrews from CONUS detachments to support it.[172]

In keeping with General McPeak's desire to continue the heritage of the Air Force's older squadrons during the force drawdowns, the OSA squadrons and detachments changed their unit designations on 1 April 1992. In the Pacific, the 1403d MAS became the 19th Airlift Squadron (ALS) while the 13th MAS simply switched to the 13th ALS. In the CONUS, the 1400th, 1401st, and 1402d MASs became the 459th, 458th, and 457th ALSs. Meanwhile, the European squadron that operated the C-21As and C-12Fs simply changed from the 58th MAS to the 58th ALS.[173]

Divestiture—Phase II

While the overseas OSA divestiture was being implemented, forces were at work that would ultimately lead to AMC divesting most of its OSA units in the CONUS. Not surprisingly, budget cuts were a primary factor but General McPeak's philosophy of "one base-one boss" also played a major role.

The massive budget reductions facing the Air Force caused planners to look at all options to trim expenses. Contractor logistics support was an area where officials determined cuts could be made. As a result of a CLS study group meeting in February 1992, the SECAF and CSAF approved a number of recommendations intended to ultimately reduce CLS costs. Two recommendations directly affected OSA. First, MAC and Air Force Logistics Command (AFLC) were to "develop C-12/C-21 basing consolidations options to determine the most cost effective basing options consistent with mission requirements."[174] Second, the two commands were to "develop force/flying hour options to determine the most cost effective mix of force structure/flying hours consistent with mission requirements."[175] In effect, the Air Staff directed MAC and AFLC to figure out the most cost effective mix of planes, bases, and necessary flying hours for OSA.

MAC planners quickly went to work analyzing various basing and force structure options. On 11 March 1992, MAC/XPYR produced a detailed paper containing six different OSA basing and force options. However, the planners made several assumptions which limited the scope of the analysis. First, with one exception, only the 12 current OSA bases were considered as potential

bases for consolidation excluding the possibility that another, more centrally located base might offer a better alternative. Second, the new units were limited to a minimum of six aircraft "to achieve economies of scale for aircraft maintenance and crew force."[176] Third, the support data only considered "priority 1, 2EU, and O-9 [Lt Gen] and above ('must move') passengers and cargo departure points."[177] Historically, requests in these categories represented less than 50 percent of the total requests so the more typical staff officer move was not considered. Still, the paper produced six different basing options with pros and cons for each.

The three-base option put all CONUS OSA planes at Travis AFB, Scott AFB, and Andrews AFB, thereby providing support to all geographic regions. Although this alternative reduced overhead costs, it actually increased CLS costs and resulted in a 2.7 percent service reduction. This was the only option that considered using a base not currently hosting an OSA unit.[178]

The next option looked at six bases: Andrews, Wright-Patterson, Scott, Offutt, Peterson, and Langley AFBs. Overhead costs fell from the current levels but CLS costs increased slightly and this option required about $4.4 million in new construction. Politically, this choice provided OSA aircraft at all four-star commands but required long, relatively unproductive positioning legs to serve the west.[179]

Next, the paper explained a seven-base option: Andrews, Scott, Wright-Patterson, Offutt, Peterson, Maxwell, and Randolph AFBs. The overall cost savings were not quite as much as the two previous alternatives but the service level increased by 3.4 percent over the current figures. Unfortunately, this option still lacked adequate coverage for the west.[180]

The fourth option considered eight bases—the seven bases in the previous option plus Norton AFB in California to provide west coast coverage. The paper forecast minor savings in overhead and about the same CLS costs as under the current basing scheme. However, this eight-base option provided "superior coverage of demand areas due to elimination of small (4 to 5 aircraft) detachments and concentration of aircraft at or near high demand areas."[181] A variation of this option considered the same eight bases but eliminated all CONUS C-12Fs. Compared to the current status, this alternative would save $8 million annually but it also meant a nearly 11 percent reduction in service.[182]

The sixth option also eliminated the CONUS C-12F fleet but added Langley AFB, thereby providing OSA at nine bases. Cost savings were not quite as good as the fifth option, and service level cuts were slightly worse, exceeding 11 percent.[183] Nevertheless, this choice provided more direct support to Headquarters Air Combat Command (ACC) which, from a political standpoint, was apparently worth the higher costs and reduced service. However, considering actual use, Langley was a very poor choice for an OSA base. The analysis used data covering all of 1991 and showed Langley only needed one aircraft to meets its historical usage requirements, not the minimum six considered necessary from overhead and CLS cost standpoints.[184]

Although the eight-base (without C-12Fs) option potentially offered higher savings and more service than the nine-base alternative, MAC chose the latter option. In turn, MAC forwarded the nine-base, C-12F drawdown proposal to the Air Staff as an offset in the FY 1994-1999 budget drills and "as an input to a SECAF-directed review of OSA force structure."[185]

Under the chosen option, the theater C-12F fleets (20 planes) would remain along with the three C-12Fs assigned to the flying training school at Scott AFB. MAC also proposed transferring the 40 C-12F aircrew authorizations gained from eliminating the CONUS fleet into the C-21A and theater C-12F fleets. Such a move would increase the current crew ratios (1.13 CONUS and 1.5 theater) up to 1.55 for each plane worldwide.[186] In addition, the flying time required to age the 132 authorized OSA copilots came to 63,840 hours—50,400 in the C-21As and 13,400 in the remaining C-12Fs.[187]

All the discussion of cost effectiveness overshadowed the wartime readiness issue. A 16 March 1992 staff summary sheet signed by the MAC DCS for Plans and Requirements, Brig Gen Phillip Ford, said MAC planners had "determined OSA wartime readiness requirements are the driving factors in determining force structure/flying hours mix."[188] Indeed, MAC planners claimed the proposed consolidation/elimination "maintains present wartime capability in CONUS and theaters."[189]

Unfortunately, the present wartime capability was far below stated wartime requirements so further reducing the OSA fleet really meant a larger gap between requirements and capabilities. Yet, none of the point papers or other written material accompanying General Ford's staff package ever mentioned any theater or CONUS wartime requirements or how planners had reached the conclusion that eliminating 16 planes could maintain the current capabilities. Nor is there any evidence indicating planners ever endeavored to determine if the theater commands' previously stated OSA support needs were still valid. In short, wartime readiness requirements received continued lip service while budget realities actually drove the OSA force structure and flying hour decisions.

Still, the push to consolidate bases and eliminate the CONUS C-12Fs was strong. However, the proposed force cut was canceled for the time being while another issue surfaced that meant more in the short term to CONUS divestiture.

One Base—One Boss

One of General McPeak's strong desires was for the senior commander at a base to command and control all forces assigned to that base. Known as one base—one boss, the principle guided many unit transfer actions including the June 1992 transfer of overseas OSA units to the theater MAJCOM. When Gen Ronald R. Fogleman assumed command of Air Mobility Command in the summer of 1992, he embarked on a number of moves to support the one base—one boss philosophy. Among his proposals was the idea to divest the

command of OSA units not assigned to AMC bases. On 1 December 1992, the Air Staff issued a message confirming the CSAF's agreement with General Fogleman's concept and ordered planning to commence towards a 1 April 1993 divestiture date.[190]

Not wanting to confuse the consolidation and reduction proposals with the divestiture concept, the Air Staff and resulting memorandum of understanding (MOU) between AMC, ACC, Air Training Command (ATC), Air Force Materiel Command (AFMC), Air Force Space Command (AFSPACECOM), and Air University (AU) merely transferred all CONUS OSA units in place to their respective host base MAJCOMs. AMC retained the units at its three bases and associated OSA units and, for the time being, the flying training school. The transfer breakdown is shown in table 23.

Table 23

CONUS OSA Divestiture: Bases, Aircraft, and Commands

Base	Gaining Command	C-21As	C-12Fs
Langley	ACC	6	–
Barksdale	ACC	5	–
Offutt	ACC	9	–
Wright-Patterson	AFMC	5	6
Eglin	AFMC	4	–
McClellan	AFMC	4	–
Maxwell	AU	4	–
Randolph	ATC	5	–
Peterson	AFSPACECOM	6	–
Andrews	AMC	8	6
Scott*	AMC	6	–
March	AMC	4	4

*Does not include the four C-21As and three C-12Fs in the schoolhouse.

Source: Memorandum of Understanding (Draft) among ACC, AFMC, AFSPACECOM, AMC, ATC, and AU for Transfer and Operation of Operational Support Airlift (OSA) Assets, April 1993, 1.

The draft MOU delineated the support functions and responsibilities for all the affected commands. AMC would "exercise Planning, Programming, and Budgeting System (PPBS) proponency and weapon system management responsibility" for the gaining commands.[191]

In terms of daily operations, the Headquarters AMC Tanker Airlift Control Center (TACC) [which absorbed the 1440th MASS] would "exercise centralized mission control and tasking responsibility for the CONUS OSA forces flying operational missions."[192] Meanwhile, local commanders would continue to have scheduling as well as command and control authority over training missions. In FY 1993, 11 hours per plane per month were devoted to local training while the TACC was given 35 hours per aircraft per month for C-21A

operational missions and 31 hours per aircraft per month for the C-12Fs. Outyear funding was programmed to increase to allow 45 hours per aircraft per month for both C-21A and C-12F operational mission tasking while retaining the 11 hours per month training rate.[193]

So far as logistics support was concerned, AMC agreed to continue as the single weapon system manager for the CLS contract. This assured a stable, consistent approach to maintenance support issues for the OSA aircraft.[194] However, each gaining MAJCOM was now responsible for their share of the CLS costs as well as providing the funds for each location's fixed base costs, the minimum training hours, and the minimum operational mission hours (although AMC would set the number of operational hours).[195]

The bottom line for divestiture was that the OSA units would belong to the local wing commanders per the one base—one boss concept. AMC, through the TACC, would continue to exercise centralized control over operational missions. However, the MAJCOMs would now command the units and direct their local training programs. If the MAJCOMs wanted to fly the OSA aircraft more than the current budget allowed, the MAJCOMs would have to fund the increase. In addition, MAJCOM and wing commanders could use local training hours as they saw fit, increasing the possibilities of waste and abuse (actual or perceived). The simple fact that several senior officers (wing commander, wing vice commander, and operations group commander for example) at each OSA base, as well as senior officers in the MAJCOM chain of command, were now authorized to fly as pilots meant hundreds of thousands of dollars spent to train them and hundreds of flying hours lost from the pilot seasoning program. Also, local commanders could now use OSA training hours to fly themselves or their staffs around the country without submitting to the DOD-directed validator and priority system. No doubt future Air Force, DOD, and/or GAO auditors will focus on this aspect of divestiture.

Rebasing Goes Forward

No sooner had the divestiture been completed when the budget cuts finally caught up with OSA. The OSD Program Budget Decision (PBD) 412 directed a cut in the OSA force structure (eliminating most OSA C-12Fs) which caused Air Staff and AMC planners to again look at base consolidation for the C-21As.

On 14 April 1993, the Air Staff released a message realigning the 12 existing CONUS units into eight bases. After considering the 1992 MAC rebasing study and consulting with the affected MAJCOMs, AMC issued programming plan (PPLAN) 93-18 for C-21 rebasing. The PPLAN directed closure of the CONUS OSA units at Eglin, Barksdale, March, and McClellan AFBs. The plan also redistributed most of the closing units' C-21As among the eight remaining CONUS bases. Additional C-21As were sent to PACAF and USAFE to make up for lost support caused by the C-12F drawdown.[196] Table 24 shows the old and new basing numbers.

Table 24

1993 OSA C-21A Rebasing Plan

Base	Command	1 July 1993	1 October 1993
Langley	ACC	6	6
Barksdale	ACC	5	0
Offutt	ACC	9	6
Wright-Patterson	AFMC	5	7
Eglin	AFMC	4	0
McClellan	AFMC	4	0
Maxwell	AU	4	4
Randolph	ATC	5	6
Peterson	AFSPACECOM	6	6
Andrews	AMC	8	8
Scott*	AMC	6	8
March	AMC	4	0
Howard	ACC	1	1
Ramstein	USAFE	3	9
Stuttgart	USAFE/EUCOM	3	3
Yokota	PACAF	2	6
	Totals:	75	70

*The PPLAN also moved the 375th FTS and its four C-21As from Scott AFB to Keesler AFB, Mississippi, under ATC. These four are not included in the totals.

Source: Message, 021403Z Jul 93, Headquarters AMC/XP to SECAF/FMB et al., 2 July 1993, 2–5.

The only major question not resolved by the PPLAN was PACAF's OSA allotment. The four additional C-21As sent to Yokota were to make up for the seven C-12Fs lost due to the closure of the 13th ALS at Kadena. That still left a five aircraft difference between the current and planned C-21A force levels. AMC offered the five planes to PACAF to replace the planned withdrawal of the two C-12Fs from Osan and the five C-12Fs from Elmendorf. However, PACAF planners decided the C-21A was not an adequate aircraft for the Arctic radar site support missions. Therefore, PACAF asked AMC and the Air Staff to keep the five C-12Fs in Alaska. AMC officials balked at the idea because keeping even a few C-12Fs meant considerable fixed overhead CLS contract costs. However, the Alaskan mission requirements far outweighed the costs and the request was granted.[197]

Once that solicitation was honored, AMC planned to send two of the five remaining C-21As to Osan AB in Korea. However, PACAF also reconsidered this move. The short sortie distances within the Korean peninsula and potential for wartime operations from short and/or unimproved runways really did not fit the C-21A. Here, as in Alaska, the C-12F had already achieved a proven track record of reliable and more cost effective operations with a better potential during contingencies than the C-21A. Therefore, in the late summer of 1993, PACAF asked to keep the two C-12Fs at Osan (55th Airlift Flight)

under Seventh Air Force. The Air Staff agreed to both requests before the 1 October 1993 PPLAN implementation date.[198]

No record could be located as to why USAFE did not also ask to keep some of its C-12Fs. USAFE was the command who nearly single-handedly forced MAC and the Air Force to purchase the turboprop for the wartime OSA mission. No evidence was found that USAFE's wartime OSA requirements have changed. Therefore, it seems odd that USAFE would disregard all of its own previous appeals and justifications and get rid of the C-12Fs.

Consolidated Service Scheduling

During the same time frame as divestiture and rebasing were occurring, a third issue arose that had the potential to affect OSA even more profoundly than any before it. This new question revolved around the very heart of organic airlift—who should own and control OSA?

The Chairman's Report. In February 1993, the chairman of the Joint Chiefs of Staff (JCS), US Army Gen Colin L. Powell, released his *Report on the Roles, Missions, and Functions of the Armed Forces of the United States.*[199] The report described the changing strategic situation, what had been accomplished in the preceding three years since the last triennial review, and made a number of specific recommendations for further change to increase effectiveness and efficiency. OSA was one area the JCS chairman singled out for review.

The report noted that the services operated about 500 OSA aircraft but "the current inventory, built to support a global war, exceeds what is required for our regionally oriented strategy."[200] During the review, analysts considered several alternatives to the traditional operations under individual service control including using civilian contractors for the entire mission, consolidating the OSA fleet under a single (presumably unified) command, and consolidating OSA assets under a single service. The report suggested further study "to determine which alternative will provide the best balance of efficiency and effectiveness."[201] The OSA review concluded with two recommendations. First, "OSA aircraft are in excess of wartime needs and should be reduced" and, second, "TRANSCOM [US Transportation Command] will develop the capability to coordinate and schedule intratheater airlift."[202] The first recommendation in part led to the C-12F drawdown and subsequent rebasing. However, the second recommendation caused planners at TRANSCOM and all the service headquarters to seriously review OSA operations and come up with a plan to satisfy the chairman's direction.

The Services Get Together. Supporting General Powell's second recommendation, the SECDEF released a memo dated 15 April 1993 tasking "USCINCTRANS to develop the capability to coordinate the scheduling of CONUS Operational Support Airlift."[203] On 23 April 1993, USTRANSCOM informed the services of the SECDEF's tasking and invited service representatives to attend a working level meeting at Headquarters USTRANSCOM (Scott AFB).[204]

Kicking off the meeting on 4 May 1993, the USTRANSCOM (USTC) briefer began with the group's statement of purpose: "In collaboration with OSD, Joint Staff and Services, develop an implementation plan [IPlan]for SECDEF approval which, when implemented, will allow USTRANSCOM to coordinate the scheduling of all CONUS-based OSA during peace and war."[205] Service representatives followed by briefing attendees on how OSA was currently organized and scheduled within each service.

Not surprisingly, each service operated somewhat differently. The Navy OSA fleet (C-12s and CT-39s) belonged to the host bases and provided base and command support. Navy scheduling was fully automated using the Navy Air Logistics Information System (NALIS) computerized system for worldwide control.[206] Meanwhile the Army had just recently combined all of its OSA assets (C-12s and U-21s) under the Operational Support Airlift Command (OSAC) headquartered at Fort Belvoir, Virginia. The Army used its own computer system for OSA scheduling but was in the process of acquiring the software to interface with the NALIS system.[207] The Marine Corps' few small OSA planes (C-12s and CT-39s) were split among several agencies according to geographic area but assigned to the individual air bases. CONUS scheduling used the Navy's NALIS computer.[208] The Air Force concluded the briefings with a discussion of AMC's operational command and control. The AMC briefer explained that validator sent in requests via computer link but actual scheduling was performed manually, primarily because of all the last minute changes.[209]

The Joint Staff Roles and Missions Action Log required an IPlan be forwarded to the Joint Staff by August 1993 with implementation to commence in January 1994.[210] To meet this very ambitious schedule, USTC officials presented meeting attendees with a milestone plan that included creating several action officer working groups overseen by a colonels' group.[211]

One major point of contention arose during the meeting and it concerned the services concerns about retaining ownership of their organic airlift. The Navy and Marine Corps representatives questioned the meaning of coordinated scheduling. They saw the term as meaning USTC would not actively control scheduling but would merely coordinate the use of any seats left over after the owning service filled their individual needs. However, USTC officials viewed the term as meaning USTC would eventually become the central scheduling manager for all CONUS OSA. USTC would integrate the most efficient aspect of existing command and control, automated data processing, and reporting systems currently used by the services. The scheduling office could physically be located anywhere but most logically at Scott AFB, at or near USTC headquarters. The bottom line was that the services would retain command but USTC would exercise mission control. Agreeing to put the coordination issue on hold until the working groups could investigate the matter, attendees left the meeting and set about to begin the implementation process.[212]

The Implementation Plan. On 27 August 1993, Gen Ronald R. Fogleman, USCINCTRANS, signed the cover sheet for the "United States Transportation Command Implementation Plan for Operational Support Airlift."

General Fogleman noted the plan "proposes a coordinated scheduling option which strikes a legitimate balance between the operational concerns of the Services and the necessity to optimize the efficiency of OSA assets."[213]

The plan was divided into two phases. Phase I is to be implemented on 1 January 1994 and will use "a consolidated schedule format to share opportune airlift whenever possible."[214] Each service continues using its own system but coordination and asset sharing will be instituted by converting the Navy, Marine, and Air Force OSA schedules into the Centralized Army Airlift Support System (CAASS) format.[215]

Phase II is a midterm effort that will eventually transition all service OSA scheduling to the modernized NALIS computer system. Scheduled to be operational by September 1994, the improved system is known as Relational NALIS (RNALIS). According to the USTC IPlan, "following the transition to Service scheduling on RNALIS, the coordinated scheduling process will be monitored by USCINCTRANS through quarterly steering group meetings."[216]

The overall result of the IPlan is not what USTC officials originally foresaw. USTC will not centrally manage and control the service OSA assets. Instead, the services will continue to individually schedule their OSA aircraft and "coordinate as appropriate for sharing seat and aircraft utilization with other Services and Agencies using the consolidated schedule."[217] Whether the IPlan meets the coordination criteria set down by the SECDEF and JCS chairman remains to be seen. However, as of 12 October 1993, the plan was still on track for its 1 January 1994 implementation.[218]

Summarizing the Early 1990s

From OSA's role in Operations Desert Shield/Desert Storm in 1990 through the 1993 proposal to consolidate all service OSA assets under USTC, the past four years have proven momentous for OSA. Budget cuts and changing command philosophies brought about major drawdowns in the force structure, led to MAC/AMC divesting itself of most of its OSA resources, and caused the rebasing of the remaining OSA aircraft. Although OSA seems stable for the moment, history has shown world events can cause far-reaching effects. The rest of the decade and beyond are sure to be as full of change as the early 1990s.

A Generation of Change

The past 20 years have seen OSA forces involved in two major wars and several contingencies, most far from US shores. Yet the focus of Air Force efforts has revolved almost entirely on supporting and managing OSA's peacetime role. Even that peacetime function has evolved since the mid-1970s from providing proficiency flying time for attached staff pilots to providing pilot seasoning whereby recent pilot training graduates receive early flying experience in relatively low-cost airframes. Through it all, providing free airlift to official duty travelers has remained a very valuable, if not officially stressed, by-product of the OSA training.

During the same time frame, Air Force OSA transitioned to new aircraft, replacing the venerable CT-39A with C-12Fs and C-21As, only later to witness most of the C-12Fs withdrawn from OSA service due to budget cuts. In addition, CONUS OSA bases were dramatically reduced, first from 30 to 15, then down to 12, and now down to just eight in 1993.

Meanwhile, OSA command and control came around full circle. In the mid-1970s, most MAJCOMs transferred their OSA resources to MAC as part of the general airlift consolidation effort. Less than 20 years later, OSA returned to the host MAJCOMs as part of airlift deconsolidation brought about by the philosophies of theater command and the one base—one boss concept.

Despite some attempts to validate wartime requirements and even train to operate in a wartime environment (Combat Aircrew Training), most efforts have been half-hearted at best and mere lip service at worst. If OSA is to truly be justified on the basis of wartime readiness requirements, then a number of changes should be made to make the force ready for war. These recommendations, many evolving from the issues discussed in this chapter as well as chapters 2 and 3, are presented in chapter 6. But first, we must understand what OSA faced and accomplished in the two major conflicts of the past 25 years, Vietnam and the Persian Gulf. The next chapter details the OSA experience in these two wars.

Notes

1. *History of Military Airlift Command, 1 January–31 December 1984* (U), 73–74. (Hereafter referred to as *MAC History: 1984*, etc.) (Secret) Information extracted is unclassified.
2. Gen Jerome F. OMalley, CINCPACAF, to Gen Thomas M. Ryan, Jr., CINCMAC, letter, subject: OSA Ownership, 23 February 1984, 1.
3. *MAC History: 1984*, 75.
4. Author's personal experience as wing commander's executive officer, 374th TAW, Clark AB, Philippines, from May 1988 to June 1989.
5. *MAC History: 1984*, 24, 76–77. (Note: Page 76 erroneously states only two C-12Fs went to Alaska but page 24 correctly says three C-12Fs were sent there); and Point paper, Headquarters MAC/DOOS, subject: Operational Support Airlift (OSA) Aircraft in Alaska (for CINCMAC/CC's TDY to the Pacific, 3–15 September 1984), 1.
6. *MAC History: 1984*, 24, 74.
7. Col Nyles B. Courtney, 375th AAW/DO, to 1600 MES/CC, letter, subject: Request for Organizational Change, 14 January 1983, 1–3.
8. Headquarters MAC/XPMO, Staff Summary Sheet, subject: 375 AAW Request for a Flying Training Squadron, 6 March 1984, 1. (Note: approval signed by CINCMAC on 17 March 1984.)
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Chapter 5

Operational Support Airlift Goes to War

From the first flights over France in World War I to those in the skies over the Arabian Peninsula during the Persian Gulf War, operational support airlift has supported US commanders and their staffs in every major war and in numerous contingencies. As described in chapter 2, a few staff support aircraft transported small numbers of staff personnel, mail, and even wounded during the First World War. In World War II, thousands of small utility transports provided staff and courier transportation, hauled light cargo and spare parts, and flew MEDEVAC missions in all theaters around the world. The staff support mission continued during the Korean conflict but relied mostly on attached staff pilots flying aircraft intended for proficiency flying training. Meanwhile, US operations in Grenada in 1983 and Panama in 1989 saw limited OSA use, but no aircraft deployed to the combat areas.

OSA operations in all of these conflicts were somewhat ad hoc. Before Vietnam OSA units usually consisted of a few planes attached to nearly every command headquarters, flying missions for that headquarters or subordinate organizations without any centralized command and control or overarching mission purpose. Often the aircrews were staff pilots flying as a secondary duty, sometimes assisted by a small cadre of full-time pilots. In short, staff support airlift was generally an afterthought.

However, Vietnam changed how OSA operated in a war zone.[1] For the first time planners created a separate OSA unit, with specific missions, under a centralized command and control structure. Although the command organizations changed several times during the lengthy conflict, the Vietnam experience proved the concept of a unique OSA force with dedicated aircrews and planes flying regularly scheduled missions backed up by an alert capability.

OSA operations in the Persian Gulf eventually followed a similar pattern. The major difference between the two conflicts for OSA was that Vietnam allowed a gradual buildup for OSA operations while Desert Shield required OSA forces to deploy nearly halfway around the world with just two days notice. Because of the short time frame and no-notice deployment, the US Air Forces, Central Command (CENTAF) staff took awhile to figure out how to run OSA operations and what OSA forces could and could not do. After a few weeks of working out the bugs, OSA ran smoothly for the duration of the conflict.

Despite OSA's successes in these two major US wars, a number of lessons pointed out deficiencies in OSA's wartime operations. These lessons must be passed on to future planners and operators to prevent similar inadequacies. Therefore, this chapter provides a historical synopsis of OSA actions during Vietnam

and the Persian Gulf wars and draws some conclusions about OSA's wartime experiences.

Vietnam

US Air Force operational support airlift served US forces in Southeast Asia throughout the entire period of conflict. However, OSA-type operations actually began well before US ground troops arrived in force.

The venerable C-45 Expeditor that saw so much action in World War II and Korea as a staff and administrative airlift plane made a comeback during the early 1950s. During the last few years of French involvement in Indochina, French Air Force pilots flew eight of the twin-engine planes during the last few years of French involvement in Indochina, primarily transporting passengers and light cargo between the major French bases in the theater.[2] As late as the mid-1960s, Air America flew several C-45s out of Saigon supporting the US Agency for International Development's nation-building efforts, carrying supplies and personnel throughout the theater.[3] However, by this time the Air Force had introduced more modern OSA aircraft into Vietnam.

The Early Days in Vietnam

Pacific Air Forces (PACAF) operated T-39s out of several bases in the early 1960s. Sabreliners were based at Clark Air Base in the Philippines, Kadena AB in Okinawa, and at Yokota AB just outside Tokyo in Japan. However, the first OSA-type plane introduced into Vietnam on a full-time basis was the Cessna U-3B. In May 1963, two U-3Bs began operations at Tan Son Nhut AB, Saigon's main airfield. The U-3B mission was to "serve as couriers for film, prints, and intelligence reports to units throughout South Vietnam."[4]

By mid-1964, these U-3Bs were joined by four C-54s, a VC-123, and a VC-47 that provided for DV travel, rest and recreation (R&R) leave, and special missions outside the normal theater airlift system. In addition, the first two T-39s arrived at Tan Son Nhut, but were primarily reserved for use by the US ambassador to South Vietnam.[5] Thus, early OSA operations in Vietnam primarily supported DV, R&R, and limited intelligence air travel needs. However, the need for OSA greatly expanded in 1965.

Reconnaissance Needs—Courier Missions—Dedicated Planes

On 8 July 1965, the 6250th Support Squadron (SS) activated at Tan Son Nhut AB under the 6250th Combat Support Group. The new support squadron took over operations of all the special mission aircraft assigned to Tan Son Nhut.[6] Shortly thereafter, six T-39s arrived from the CONUS to join the 6250th SS. These six planes were primarily "fast film couriers used to link reconnaissance aircraft bases in Thailand with the intelligence center in Saigon."[7] The T-39s also flew DVs throughout the Indochinese theater, including offshore points. Meanwhile, the

U-3Bs flew the finished photo reconnaissance films to smaller sites within Vietnam.[8]

Reorganization. On 24 January 1966, the 6250th SS was reassigned from its parent support group to the 2d Air Division (AD), which itself was reorganized into Seventh Air Force less than three months later on 1 April 1966. Two years later on 15 June 1968, Seventh Air Force officials removed the 6250th's Flight Operations Division from the squadron and renamed it Seventh Air Force Flight Operations directly under Headquarters Seventh Air Force.[9]

Officially, the flight operations' mission was to provide support of a noncombat nature to Seventh Air Force. Support included "the transportation of high priority personnel and distinguished visitors, and the movement of classified courier materials and strike films throughout SEA [Southeast Asia]."[10] As of 1 March 1968 a civilian airline took over the R&R flights.[11]

Because Seventh Air Force headquarters (and its predecessor, 2d AD) did not directly possess an aircraft maintenance organization, the OSA aircraft themselves belonged to the host wing at Tan Son Nhut AB, the 460th Tactical Reconnaissance Wing (TRW). Detachment 1 of the 460th TRW exercised the maintenance responsibility for the OSA planes as well as all the miscellaneous command aircraft based at Tan Son Nhut. By January 1966, Detachment 1 controlled eight assigned T-39s and four U-3Bs.[12] However, only six of the T-39s and two of the U-3Bs were dedicated to the courier missions.[13] The other two T-39s and two U-3Bs were configured for DV use.

Manning and Experience Problems. By early 1968 the T-39 operation was experiencing difficulties of undermanning and inexperience. With the air war in full swing, the reconnaissance business was going full speed requiring a high T-39 utilization (UTE) rate. To meet the demand, Seventh Air Force requested PACAF to increase the T-39 pilot authorizations by more than 25 percent. PACAF agreed to the request on 14 March 1968 with the increase in crew ratio from 1.13 to 1.44 to take effect on 1 July 1968.[14]

Maintenance of a high level of experience among assigned pilots continued to be a primary objective for the OSA unit. Pilots arriving in Vietnam with relatively few hours in the T-39 were reassigned, and those similarly inexperienced officers still inbound were diverted to other assignments. Highlighting the need for highly experienced T-39 pilots for the critical combat support mission, the Seventh Air Force deputy chief of staff for Personnel outlined the required pilot criteria in a letter to Military Personnel Center officials: courier pilots must have "a minimum of 600 hours and/or 100 hours of instructor pilot (IP) time in the T-39 aircraft."[15]

SCATBACK

In late 1968 the courier portion of Seventh Air Force Flight Operations picked up the code name "SCATBACK." From then on, SCATBACK denoted the courier service that provided "long-range distribution of photoreconnaissance and intelligence products in Southeast Asia."[16] SCATBACK continued providing that support from Tan Son Nhut (TSN) AB until 1973 when the operation moved to Thailand's Nakhon Phanom (NKP) Royal Thai Air Force Base.[17]

Primary Missions. Although SCATBACK existed to serve the direct needs of Headquarters Seventh Air Force, the courier mission really satisfied the requirements of the three primary user agencies. All three users were based in Saigon until the pullout of US troops in the early 1970s.

All Air Force photoreconnaissance assets in South Vietnam were assigned to the 460th TRW at Tan Son Nhut. A major part of the 460th TRW's mission was "to provide aerial surveillance and reconnaissance in support of Military Assistance Command [Vietnam (MACV)] and the United States Army, Vietnam."[18] Because of the central location of the photoreconnaissance squadrons and the vast expanse of Army users throughout Vietnam, the Air Force used the SCATBACK couriers to deliver time critical information to the military intelligence battalions (MIB) in each Army Corps area for further dissemination. Seventh Air Force Flight Operations was specifically tasked to support these requirements under an existing operations order (OPORD).[19]

The second primary user of SCATBACK support was the 600th Photo Squadron (PS), also located at Tan Son Nhut AB. The squadron accomplished ground and aerial still and motion picture documentation photography, including "aerial photographic coverage of Air Force strike operations in SEA."[20] With detachments at each SEA fighter base and processing units at two bases in South Vietnam and three in Thailand, the 600th PS required a turnaround within 24 hours for its materials. A Seventh Air Force operations plan (OPLAN) directed SCATBACK support.[21]

SCATBACK's third major user was the 12th Reconnaissance Intelligence Technical Squadron (RITS). The 12th RITS was an intelligence gathering squadron responsible in part for processing and reproducing reconnaissance and strike photography as well as target materials for Seventh Air Force and all fighter bases in SEA. SCATBACK's support for this organization was not part of any preexisting OPLAN or OPORD but was instituted to meet an unpredicted need that grew as the war progressed.[22]

Secondary Missions. Seventh Air Force Flight Operations and SCATBACK provided support to several other users and activities in the theater. Most secondary missions were instituted via Seventh Air Force regulation or letter.

The Seventh Air Force director of Administration used SCATBACK to distribute unclassified material as well as mail throughout SEA. Meanwhile, Seventh Air Force Flight Operations was responsible to Seventh Air Force headquarters, MACV, and the US Embassy for DV airlift support. In addition to the T-39s and U-3Bs, there were five larger aircraft assigned expressly for the DV role. Another service SCATBACK provided was transportation of combat essential and not operationally ready-supply (NORS) parts to bases throughout SEA. SCATBACK also supported special requirements, usually of limited duration (e.g., providing service to the USAF security service in delivering mission results to various sites). Any seats left over after satisfying the above duties were offered to passengers on official business.[23]

Priorities and Planning Factors. Considering all the requests for SCATBACK support, the Chief of Staff, Seventh Air Force established the following priorities:

1. Reconnaissance and intelligence material delivery.
2. Official mail delivery.
3. Combat essential or NORS delivery.
4. Official business passenger travel as directed by Seventh Air Force.[24]

To meet the daily needs, SCATBACK generally used the T-39s on the longer sorties and reserved the U-3Bs for the shorter missions. However, the T-39s were restricted to runways of 5,000 feet or longer while the U-3Bs could operate on fields as short as 3,000 feet long.[25] These planning factors and even runway lengths are strikingly similar to those used in the selection process for the C-12F and C-21A nearly 20 years later.

Mission Schedules. Daily and weekly schedules varied throughout the duration of courier operations in SEA. Users were constantly altering their requirements necessitating an appropriate change to the SCATBACK support schedule. However, in April 1969 SCATBACK operated seven daily courier missions, four with T-39s (A, B, C, and D missions) and three with U-3Bs (W, X, and Y missions). These missions required a minimum of two T-39s and one U-3B to operate the required sorties. However, schedulers usually used four T-39s and two U-3Bs each day to maintain on-time operations and reliability. In addition, an alert aircraft crew was available 24 hours a day, primarily to pick up a mission of another courier plane that might break down at another base.[26] Table 25 shows the seven regularly scheduled SCATBACK missions as of April 1969.

Table 25

SCATBACK Courier Missions as of April 1969

Mission	Aircraft	Depart Tan Son Nhut	Stops	Arrive Tan Son Nhut
A	T-39	0100	Tuy Hoa, Phu Cat, Da Nang, Cam Ranh Bay, Nha Trang, Phan Rang	0550
B	T-39	0800	Phu Cat, Pleiku, Nha Trang, Da Nang	A/R
C	T-39	1030	Udorn, Nakhon Phanom, Da Nang	1600
D	T-39	1900	Da Nang, Udorn, Takhli Korat, Ubon	A/R
W	U-3B	0730	Binh Thuy	A/R
X	U-3B	1130	Binh Thuy	A/R
Y	U-3B	1600	Bien Hoa	A/R

Note: All times are Saigon local.

Source: Seventh Air Force Flight Operations, "SCATBACK Courier Study," April 1969, 13–14.

Since intelligence requirements often changed, so too did SCATBACK's schedule. However, problems often developed for one user when the flight

schedule changed to meet the needs of another user. To better coordinate the courier scheduling process and improve overall courier support, Seventh Air Force Flight Operations conducted a relatively in-depth review of SCATBACK operations and, in April 1969, issued its "SCATBACK Courier Study." The review found that "there is some confusion as to which agency is responsible for overall courier coordination [and that] no one agency fully understands the complexities of the actual courier schedule and operation."[27] At the time, the in-country reconnaissance officer (under Seventh Air Force) exercised operational control over SCATBACK courier operations, but sometimes made scheduling decisions without regard for all the users, thereby causing significant problems.[28] Recognizing the problems, the courier study recommended that Seventh Air Force designate the Flight Operations Section as the "overall courier coordinating agency . . . which would be responsive to the needs of all the courier users" and draft a revised regulation to cover the proposed change.[29]

It is not clear whether the new regulation was ever implemented. However, the need for a single controlling agency responsive to the needs of all users is basic to flexible, responsive airlift. Unfortunately, based on the OSA command and control setup initially used in the Persian Gulf, the lesson had either not been learned or had been forgotten between 1969 and 1990.

Drawdown and Relocation. SCATBACK operations continued out of Tan Son Nhut AB until early 1973 when the cease-fire forced an end to the mission in South Vietnam.[30] By January 1973 the SCATBACK T-39 courier schedule was down to three daily missions primarily connecting the remaining US bases in Thailand with Saigon. Table 26 shows SCATBACK's January 1973 T-39 schedule.

Table 26

SCATBACK T-39 Courier Missions as of January 1973

Mission	Aircraft	Depart Tan Son Nhut	Stops	Arrive Ton Son Nhut
A	T-39	1330	Udorn, Nakhon Phanom, Ubon, Da Nang	1855
B	T-39	0930	Takhli, Korat, Udorn	1650
C	T-39	2030	Udorn, Nakhon Phanom, Ubon	0100

Note: All times are Saigon local.

Source: *History, 56th Special Operations Wing/SCATBACK*, 5-28 February 1973, Document 4.

On 14 February 1973, the T-39s moved from Saigon to Nakhon Phanom Royal Thai Air Force Base in Thailand. By that time, the SEA drawdown had reduced the SCATBACK courier inventory by eliminating the two U-3Bs. So, the unit moved its six courier T-39s as well as two C-118s and two C-47s

(used for some long-range courier missions, but primarily for DV, R&R, and other passenger airlift support needs). The C-118s also moved to NKP in February, but the C-47s did not leave Saigon until March.[31]

As in South Vietnam, SCATBACK served two masters in Thailand. With the move from South Vietnam, operational control became the responsibility of the chief of staff, United States Special Advisory Group (USSAG) in Thailand. Meanwhile, all other SCATBACK functions such as flight operations and maintenance transferred to the 56th Special Operations Wing (SOW) headquartered at NKP.[32]

In Thailand the Seventh Air Force defined the SCATBACK role by its primary and secondary missions. The primary mission was "to provide tactical airlift of reconnaissance and intelligence materials, official mail, passengers (duty, R&R, TDY), and NORS parts throughout Southeast Asia."[33] Meanwhile, OSA's primary peacetime by-product—DV transport—served as SCATBACK's secondary mission by supporting Seventh and Thirteenth Air Forces, the USSAG, and the US embassies in Saigon and Bangkok. The USSAG also tasked SCATBACK to "airlift Special diplomatic and military personnel."[34]

The T-39s initially flew three scheduled missions per day to other bases in Thailand.[35] For the period of 5-28 February 1973, the T-39s flew over 425 hours on 114 missions with 450 sorties (legs). The planes carried 527 passengers and nearly 40,000 pounds of cargo.[36] These numbers reflect nearly five missions per day flying slightly less than one hour per sortie while averaging about one passenger and 88 pounds of cargo per sortie. Table 27 shows the February 1973 SCATBACK T-39 schedule after the move to Thailand.

Table 27

SCATBACK T-39 Courier Missions as of February 1973

Mission	Aircraft	Depart Nakhon Phanom	Stops	Arrive Nakhon Phanom
A	T-39	0545	Udorn	0700
B	T-39	0900	Udorn, Takhli Korat, Ubon, Tan Son Nhut, Da Nang	1710
C	T-39	1230	Udorn, U-Tapao, Bangkok, Udorn	1805

Note: All times are Nakhon Phanom local.

Source: *History, 56th Special Operations Wing/SCATBACK*, 5-28 February 1973, Document 1.

Comparing tables 25, 26, and 27 shows how intelligence and courier requirements dropped off coincident with the pullout of US forces from South Vietnam. The reduced mission meant SCATBACK needed fewer T-39s to accomplish its mission. Therefore, on 17 March 1973 one T-39 ferried back to the CONUS and transferred to TAC headquarters at Langley AFB, Virginia.

Also, on 8 March 1973, another T-39 was dedicated as Gen John W. Vogt's (commander, USSAG and Seventh Air Force) personal aircraft.[37] The same month SCATBACK terminated flights to Da Nang AB, ending eight years of service to that base.[38]

Support statistics also reflect the reduced mission in Thailand. In March 1973, the remaining four courier T-39s flew 376.4 hours on 116 missions with 472 sorties. The passenger count of 685 was up by more than 100 from the previous month, but the cargo load of just over 13,000 pounds was only one-third of the February total.[39]

Phaseout. By the end of 1974 SCATBACK was down to just four aircraft—two T-39s and two C-118s. During December 1974, the T-39s flew 176.1 hours on 63 missions with 129 sorties and carried 190 passengers plus 4,630 pounds of cargo.[40] These figures were well below those of March 1973 and reflect the continuing decline in special airlift needs in SEA.

Meanwhile, the reduced requirements in the theater translated into a dramatically different schedule wherein SCATBACK no longer operated daily T-39 flights. Instead, the T-39s (and the C-118s) flew different missions each day as shown in table 28.

Table 28

SCATBACK Missions as of December 1974

Mission	Aircraft	Depart Nakhon Phanom	Stops	Arrive Nakhon Phanom
A	T-39	0900 - Mon	Udorn, Bangkok, Saigon	1530
B	T-39	0900 - Wed	Udorn, Saigon, Bangkok	1630
D	T-39	1400 - Fri	Saigon, Clark (RON)	1930[a]
D	T-39	1600 - Sun[a]	Saigon	1930
E	C-118	1000 - Sun	Bangkok (RON)	1135[b]
E	C-118	0700 - Mon[b]	Nakhon Phanom, Korat, Bangkok, Udorn	1530
E	C-118	1000 - Fri	Udorn, Saigon	1730
F	C-118	0900 - Tues	Bangkok, Saigon, Clark (RON)	2000[a]
F	C-118	1400 - Wed[a]	Saigon, Bangkok	2235
F	C-118	1230 - Sat	Bangkok	1640

[a] D and F missions remain overnight (RON) at Clark AB, Philippines, and depart the next day.
[b] E mission RON at Bangkok and depart the next day.

Note: All times are Nakhon Phanom local except [a] and [b] for Clark and Bangkok.

Source: *History, 56th Special Operations Wing/SCATBACK, 1 October-31 December 1974*, 8.

Another reflection of SCATBACK's changing role was the redesignation of the unit's flying activity code. From their introduction into South Vietnam in 1964, PACAF had coded the OSA U-3Bs and T-39s in the combat zone as special activity (code ZA) aircraft as opposed to the usual utility transport (ZB) code carried by the OSA T-39s at Yokota, Kadena, and Clark (and CONUS units). However, in 1974 PACAF changed SCATBACK's T-39s from special activity to administrative (SA) aircraft. By the end of 1975, all PACAF T-39s were coded as administrative planes reflecting the Air Force-wide change for OSA away from the utility transport category.[41]

The SCATBACK phaseout continued in early 1975 when one of the two C-118s left Thailand for the boneyard at Davis-Monthan AFB, Arizona, on 27 January 1975. To make up for the loss, the T-39s increased their flying time in the first quarter of 1975 by almost 140 hours over the previous quarter. The previous quarter's schedule was still on the books but largely ignored as the USSAG and Seventh Air Force constantly changed requirements.[42] The reason for the increased activity was that the "deteriorating situation in Cambodia and South Vietnam caused a significant increase in USSAG/Seventh Air Force sortie requirements."[43] Towards the end of March, SCATBACK flew General Weyland to Saigon and Nha Trang Air Base in South Vietnam. Air America personnel at Nha Trang and Tan Son Nhut, "revealed a pessimistic outlook on the future of Vietnam."[44] Indeed, time was running out for South Vietnam, as well as for SCATBACK.

By the summer of 1975, SCATBACK was out of the intelligence courier business and back to the basic DV airlift mission. With the deactivation of USSAG and Seventh Air Force, the 17th Air Division assumed operational control of SCATBACK. In turn, SCATBACK supported Thirteenth Air Force and the US Embassy in Bangkok as well as 17th AD. The remaining C-118 had been retired to Arizona earlier in 1975 so SCATBACK functioned with just the two remaining T-39s. Six pilots flew the planes full-time augmented by five attached pilots from the 17th AD staff. The 17th AD commander, Brig Gen Walter H. Baxter III, also maintained aircrew status in the T-39 and regularly flew as one of the pilots on missions supporting his transportation requirements.[45]

On 12 July 1975, SCATBACK operations deployed TDY to Udorn Royal Thai Air Force Base (RTAFB). The next month on 11 August 1975, the TDY became a permanent change of station (PCS) and SCATBACK operations transferred to the 432d Tactical Fighter Wing (TFW) at Udorn. The 432d TFW cut the T-39 flying time almost in half from 100 to 60 hours per plane per month to reflect a more realistic utilization rate. However, due to a lack of spare parts, even the 60 hour rate could not be achieved.[46] The problem stemmed from an average sortie length that was "approximately one-third of that experienced in other T-39 units."[47] The abnormally high volume of takeoffs and landings created a commensurately large demand for aircraft parts that the supply system had difficulty supporting.[48] This type of supply problem was a lesson apparently learned in time for OSA operations in the Persian Gulf.

As 1975 drew to a close, many of the remaining Air Force units in Thailand deactivated or returned to the CONUS. With a rapidly diminishing mission in Thailand, SCATBACK too closed its doors on 12 January 1976.[49] With its

deactivation, SCATBACK completed a unique chapter in the history of OSA's wartime operations. For over a decade, SCATBACK carried on the proud OSA tradition of providing vital, time-sensitive airlift support for passengers and cargo throughout the war zone, logging thousands of hours of combat flying time, without a single aircraft loss to enemy action.

A Statistical Summary. From 1966 through 1972 the United States Air Force Statistical Digest (USAFSD) contained tables entitled "Southeast Asia Operational Data" delineating flying time by mission, design, and series for bases within the theater. Table 29 presents a compilation of the OSA flying activity histories taken from these tables.[50] The T-39s and U-3Bs shown at Tan Son Nhut were ZA-coded, special activity aircraft, while the T-39s at Clark and Kadena (and Yokota as well) were ZB-coded, utility transport, planes. However,

Table 29

OSA Flying Activity in Southeast Asia: FY 1966-1972

Year	Base	Aircraft	Ave on Hand	Combat Hours	Total Hours	Total Sorties
1966	TSN	U-3B	3.00	1,188	2,787	1,173
	TSN	T-39	4.25	2,063	3,670	1,207
	CRK	T-39	4.75	0	5,855	1,870
	KAD	T-39	0.50	30	819	250
1967	TSN	U-3B	4.00	2,706	2,972	2,850
	TSN	T-39	7.25	7,245	8,813	5,488
	CRK	T-39	2.75	66	3,813	2,287
	KAD	T-39	0.00	18	360	173
1968	TSN	U-3B	2.50	263	2,341	1,123
	TSN	T-39	8.25	2,205	10,858	3,058
	CRK	T-39	2.50	205	3,440	2,032
	KAD	T-39	0.25	2	69	43
1969	TSN	U-3B	2.00	1,397	1,406	2,089
	TSN	T-39	8.25	11,360	11,432	11,411
	CRK	T-39	3.25	956	3,545	2,223
1970	TSN	U-3B	2.00	766	770	878
	TSN	T-39	8.75	8,879	11,283	11,998
	CRK	T-39	3.00	0	3,098	1,615
1971	TSN	T-39	8.00	2,457	9,320	10,001
	CRK	T-39	2.50	0	2,699	1,409
1972	TSN	T-39	5.25	105	7,701	NDR
TOTALS				41,914	97,051	63,178

Legend:
TSN—Tan Son Nhut AB (Saigon), South Vietnam
CRK—Clark AB, Republic of the Philippines
KAD—Kadena AB, Okinawa
NDR—No data reported
Ave on Hand—Four quarter average number of aircraft operationally available during a quarter

Note: Combat support hours are included in total hours but not under combat hours figures.

Source: *United States Air Force Statistical Digests: 1966-1972.*

all these planes fulfilled the basic OSA mission of wartime support, whether flying combat or combat support missions, in or around the war zone.

Several points stand out from the numbers in table 29. First, over the seven year period, OSA aircraft flew nearly 100,000 hours, more than 40 percent of which was logged as combat time. Although not shown separately, combat support time totaled nearly as much as combat time and therefore made up the vast majority of the difference between combat time and total time. Therefore, about 80 percent of the total OSA flying time was either combat or combat support time—OSA was truly combat support airlift. Second, sorties averaged less than 1.5 hours in length overall. However, for 1969-1971 at Tan Son Nhut, the T-39 sortie time was under 1.0 hours. Third, the high utilization rates for the U-3Bs ran about 75 hours per plane per month. The Clark T-39s roughly averaged between 80 and 100 hours each month while the SCATBACK T-39s flew well over 100 hours per month, sometimes as high as 125 hours per plane per month.

Together, these three factors—numerous short sorties, extremely high utilization rates, and the strain of combat and combat support missions—all contributed to the increasing maintenance problems and greatly reduced lifetime of the particular airframes. Combined with the low crew ratios mentioned earlier, the OSA force was taxed to meet the wartime support demand—an important lesson for future planners. Only through the dedication, ingenuity, and professionalism of the aircrews and maintenance personnel did OSA consistently perform its mission so successfully. Several of the same problems appeared during Persian Gulf operations.

Another important lesson from OSA service in Vietnam was the concept of operational control belonging to an office or agency well removed from the OSA flying unit or the commanding wing. There were good reasons for the command and control setup in SEA, but problems still developed. When OSA deployed to the Middle East two decades later, planners created a similar command and control arrangement, but also faced many of the same problems, especially with controllers not understanding OSA's capabilities and limitations.

Still, OSAs performance during the Vietnam war certainly proved the worth of operational support airlift in a relatively modern wartime environment. Less than 20 years later, a more modern OSA force would again prove its worth when the nation went to war.

The Persian Gulf War

Considering the incredible amount of documentation that has been written about nearly every aspect of the 1990/1991 Persian Gulf conflict, it is somewhat surprising that very little written information exists documenting OSA's exploits in the desert. However, interviews with a number of the participants, ranging from the C-21A pilots up to the operation's commander of Airlift Forces (COMALF), reveal a fairly clear picture. The resulting image shows a

dedicated force of operators fulfilling a vital mission despite severe limitations resulting from inadequate equipment, inefficient command and control, and a decided lack of proper aircrew training. That OSA so successfully completed its mission is a testimonial to the operator's ingenuity, resourcefulness, and professionalism, as well as a large dose of luck. Without that luck, the OSA operation could well have ended in disaster.

This section outlines OSA's role in Operations Desert Shield/Desert Storm (DS/DS) based upon official histories and numerous interviews. Available flight statistics are also included. Finally, the difficulties and problems encountered are summarized leading to recommendations presented in chapter 6.

Deployment to the Desert

Early in the morning of 2 August 1990, Iraqi forces invaded neighboring Kuwait, quickly seizing control of the capital, Kuwait City, and the rest of the tiny country. Five days later President George Bush activated Operation Desert Shield, the defense of Saudi Arabia and other friendly Persian Gulf nations. Within a few days of the operation's 7 August 1990 (C-Day) deployment order, numerous airlift forces mobilized and deployed to the Middle East.[51] OSA resources were included in the initial deployment force.

Ramstein's Forces Arrive First. The closest Air Force OSA assets were in Germany. By the middle of August, several of Ramstein AB's C-21s deployed to Riyadh, Saudi Arabia (SA), supporting the influx of command personnel arriving there from Europe and the CONUS. However, these planes were scheduled by an officer in the Tactical Air Control Center (TACC) as an additional duty since there were no trained OSA validators in Riyadh.[52]

Around the 10th of August, two C-12Fs deployed from Ramstein to Riyadh. For some unexplained reason, these planes worked for the US Army, Central Command (ARCENT), and not for the Air Force. This control arrangement directly violated the principle of service-controlled organic airlift. By December 1990, these planes had moved to Incirlik, Turkey, now working for the joint task force (JTF) commander there, still a questionable control setup.[53]

Unfortunately, Ramstein's OSA aircrews did not enter the war zone well prepared for the possible threat. Although the crews had received a lot of ground chemical ensemble training owing to the European threat, there were no aircrew chemical suits available so the planes could not have operated in a chemical environment. In addition, the aircrews had not received any VFR or low-level training because of host-nation sensitivity in Germany.[54] Unfortunately, Ramstein was not an isolated case for OSA forces.

Barksdale Gets the Call. The first CONUS OSA unit to receive deployment notification was Detachment 3, 1401st Military Airlift Squadron (MAS), at Barksdale AFB, Louisiana. Commanded by Lt Col Tom Horgan, the detachment deployed four of its five C-21As on 18 August 1990. All four planes arrived in Riyadh in the early evening of 22 August after delaying one day at Sigonella, Italy, due to flow control problems with Italian air traffic controllers.[55]

Unfortunately, their arrival was not anticipated by the US forces at Riyadh. According to Colonel Horgan, there was mass confusion with nobody knowing what to do with the newly arrived C-21As or their personnel. With no airlift wing structure to accept, beddown, or oversee his unit, Colonel Horgan had to find billeting for his personnel, ramp space for his airplanes, and flight planning material for his aircrews.[56]

Meanwhile, Colonel Horgan was not even sure to whom he should report. A few hours after arriving in Saudi Arabia, he found the MAC commander of Airlift Forces, Brig Gen Fred Buckingham. In turn, General Buckingham directed Colonel Horgan to Lt Gen Charles ("Chuck") Horner, the Central Command Air Forces commander. General Horner told Colonel Horgan that the C-21As would work directly for him, under the TACC at Riyadh.[57]

Despite the initial hardships and difficulties, the OSA operation was up and running as the 1612th Military Airlift Squadron Provisional (MASP) within 24 hours of its arrival, with 26 personnel including pilots, maintenance, and support staff. Indeed, the first day after arriving, the 1612th MASP flew its first three C-21A sorties. By the end of its first month of operations, the 1612th MASP had flown more than 600 hours.[58] This figure represents 150 hours per plane and equates to a utilization rate of 5.0 hours per plane per day the same UTE rate prewar planners used.

Meanwhile, the remaining CONUS OSA forces began flying missions in the US supporting the increased pace of command activity. Of note, the C-12Fs began shuttling strategic airlift crews between the staging bases, especially along the east coast. This well thought out operation made good use of the small planes and avoided tying up the big strategic aircraft, thereby freeing up those C-141s and C-5s to fly more sorties to the Gulf region.

The Maxwell Deployment—A Lesson for the Future. While Barksdale deployed to the desert, Detachment 3 of the 1402d MAS based at Maxwell AFB, Alabama, continued with its normal peacetime DV support mission with one exception. As the closest OSA unit, Headquarters MAC tasked Detachment 3 to support the US Army Forces Command (FORSCOM) in Atlanta, Georgia, with an alert airplane and crew. However, due to the short flying time between Maxwell and Atlanta (less than 30 minutes), MAC allowed the detachment to pull the alert at Maxwell instead of Atlanta. This smart arrangement avoided deploying a single plane and two crews and therefore saved potential headaches for command and control, as well as maintenance.[59]

At a Labor Day party for the detachment, the commander, Lt Col David M. Willson, received a phone call from his parent wing's deputy chief of staff (DCS) for Operations, Col Len Spitzer. The 375th deputy commander for Operations (DO) discussed sending an additional 10 or so C-21As to the Gulf with Colonel Willson as the commander. Detachment 3 would supply four of the planes with the other six coming from some other unnamed CONUS detachments. Colonel Spitzer said Maxwell (and Barksdale) were selected because taking those two units caused "the least amount of hurt" to their CONUS-supported commands. However, it is also possible that the Maxwell unit was also the best prepared to deploy. In November 1987, the unit became

the first OSA detachment to receive an operational readiness inspection (ORI). In addition, the detachment had recently completed its second successful ORI a few months earlier in July 1990.[60]

Colonel Spitzer called again on Tuesday to say relax for now but something will happen before too long. About 10 days later, another call from the 375th Military Airlift Wing (MAW) DO told Colonel Willson to plan on deploying in November to replace the Barksdale detachment.[61]

Finally, on Thursday, 24 September 1990, Headquarters MAC/DOOF notified the detachment to be ready for a quick deployment. Early on Saturday morning, Colonel Spitzer called and told Colonel Willson to deploy in two days. Because the unit had ample time to prepare for this eventuality, the Air Force personnel were ready to go. However, a potentially very serious problem soon arose with the maintenance support.

As with all OSA C-21A maintenance, the Gates-Learjet Aerospace Service Company (GLASCO) provided all contractor logistics support (CLS). The CLS contract required GLASCO personnel to deploy with their units in the event of any real world contingency. However, when the five GLASCO workers at Maxwell were notified of the operation, three refused to go, including the maintenance chief. The other two men indicated they would probably go but Colonel Willson could not be sure. He immediately notified MAC headquarters of the problem. In turn, MAC planners contacted GLASCO headquarters personnel who then promised at least five maintenance personnel would go, but they would not necessarily be the people based at Maxwell. After GLASCO threatened to fire those men refusing to deploy, the GLASCO chief at Maxwell decided to go with the unit, but the other two men still refused to deploy and GLASCO terminated their employment. To make up for the CLS shortage, GLASCO got three volunteers from other sites. These men arrived at Andrews AFB, Maryland, in time to catch the Detachment 3 planes as they passed through the base two days later.[62] This problem with civilians refusing to deploy into a war zone could have been much more serious had the situation required a full-scale deployment of CONUS OSA forces and is further discussed in chapter 6.

Another problem Colonel Willson faced was a lack of aircrew members. Based on the low CONUS crew ratio, the detachment only had nine line pilots (plus the commander and operations officer who filled supervisory positions). To meet the expected 5.0 hours per day utilization rates required more aircrew members so the detachment at McClellan AFB, California, sent four pilots to Maxwell in time for the Sunday deployment processing line.[63] However, as with the civilian maintenance difficulty, had a full scale mobilization of CONUS OSA forces been required, these extra pilots would not have been available, thereby limiting OSA support to less than that which validated wartime requirements dictate.

The McClellan pilots brought the aircrew list up to nine line aircraft commanders (AC) and four copilots (CP)—a relatively good crew mix for scheduling flexibility. However, although there were now enough pilots in the right positions, their overall experience was lacking. Of the nine ACs, seven were

first assignment pilots (FAP) having no operational experience other than OSA. Of the four CPs, only one had flown another plane after undergraduate pilot training (UPT).[64] Thus, a very underexperienced aircrew force was deploying into a real world war zone to face situations like nothing they had ever seen.

Detachment 3's problems did not end with maintenance and aircrew. There was no way to talk to the 1612th MASP at Riyadh so it was difficult to know exactly what to bring. In addition, the 375th MAW at Scott did not offer much help. The wing could have assisted Detachment 3 with diplomatic clearances, intelligence information, and deployment planning but, for some reason, did not. So, Detachment 3 personnel made their best guesses based on a C-130 carrying most of the unit's gear to the desert including the aircraft tow truck and bar, an electric power cart, and most spare parts. The aircrews also planned to carry their personal bags and one ground ensemble chemical warfare protective suit on the C-21As.[65] The lack of useful information about an area where its OSA forces had been operating for more than six weeks shows how the parent wing failed in its mission of properly preparing another of its units for the deployment.

On Monday morning, 28 September 1990, the detachment prepared for departure by loading most of its equipment on the C-130. At approximately 1130, the first C-21A departed Maxwell for Andrews AFB with two other planes following at approximately half-hour intervals. Unfortunately, the unit's fourth plane was in Tucson, Arizona, undergoing scheduled repainting and was therefore unavailable to deploy with the detachment. To make up for the shortfall, MAC directed the 1401d MAS at Scott AFB, Illinois, to send one of its planes to Andrews AFB to deploy with the Maxwell unit (although Maxwell provided the crew). The planes spent the night of 28 September at Andrews giving all unit members the opportunity to meet with their counterparts at the parent squadron.[66]

All four planes departed Andrews the next morning, with the first launch about 0530 and the last leaving around 0700. The first fuel stop was Goose Bay in Canada, about two and one-half to three hours away. Unfortunately, one plane broke down there with a fuel problem. A second plane, carrying some of the maintenance personnel, stayed back with the broken down plane. Both planes departed Goose Bay after a one-day delay.

Keeping two planes together allowed for mutual navigation support for the next and most critical leg—Goose Bay to Keflavik, Iceland. In between the two stops there were no diversion bases in case of problems during the planned three hour flight. In addition, if the planes got farther than two hours away from Goose Bay and, for whatever reason (such as bad weather) could not land in Iceland, there was not enough fuel on the planes to get back to Goose Bay. More troubling was the fact that the C-21As were relying on their single universal navigation system (UNS) on board the aircraft. The UNS depended on receiving signals from ground navigation system stations. However, reception was sometime insufficient to provide accurate course guidance, particularly in northern regions. So, between the navigation and fuel limita-

tions, the aircrews understandably felt uneasy about this long, mostly overwater, leg. Fortunately, all the aircraft made this hop without serious incident. However, the navigation inadequacies would show up again in the desert. In addition, the weather at Keflavik was indeed marginal on the second day, with crosswinds right at the C-21As' maximum operating limits.[67]

After refueling at Keflavik, the two remaining planes left for the two and one-half hour jump to Ramstein AB, Germany, arriving late Tuesday night local time. Rather than proceeding on, the crews took the next day off to wait for the two delayed C-21As which arrived Wednesday night. On Thursday morning 58th MAS personnel briefed Detachment 3 personnel. The topics ran from the 58th's C-21A experiences in the Persian Gulf area of responsibility (AOR) to specific procedures to use within Europe and Saudi Arabia. According to Detachment 3's commander, these briefings were "worth their weight in gold" as they gave unit members their first real glimpse of operations in the AOR and what to expect upon their arrival.[68]

At 0400 on Friday, 2 October 1990, the first Detachment 3 C-21A departed Ramstein with the others again following at half-hour intervals. After refueling stops at Sigonella, Italy (Sicily), and Cairo West, Egypt, the four planes arrived in Riyadh between 1700 and 1900 in the early evening with the supporting C-130 arriving shortly thereafter. The 1612th MASP's commander, Colonel Horgan, met Colonel Willson's aircraft and the two quickly got down to the business of consolidating the two units into a single, cohesive OSA squadron.[69]

Employment in the Gulf

By the time Detachment 3, 1402d MAS arrived in Riyadh, the Barksdale unit had been operating there for almost six weeks. Therefore, Detachment 3's assimilation into OSA operations in the Gulf was much faster and smoother than Barksdale had experienced. Still, there were some problems, again headed up by the maintenance CLS support. Once these problems were overcome, the 1612th MASP provided exceptional support to Headquarters Central Command (CENTCOM) and CENTAF commanders and staffs.

However, the OSA experiences during Operations Desert Shield/Desert Storm also showed some glaring inadequacies in training, equipment, CLS, and command and control. It was indeed fortunate that the shooting war did not start until January 1991 because OSA forces were not ready to operate in a war zone when they arrived in the AOR and for quite some time thereafter.

More Maintenance Problems. The maintenance setup at Riyadh created more difficulties for the OSA squadron. The Air Force allocated the CLS personnel one tent to store spare parts and equipment. The tent was located next to the aircraft parking ramp which had room for five of the C-21As. The remaining three jets had to be parked on a nearby taxiway. The GLASCO chief of maintenance, the same man who threatened not to deploy in the first place, proved difficult to work with, often complaining that working conditions did not meet the contractual requirements. In addition, the GLASCO

personnel were housed in hotels downtown, far from the base. Saudi Air Force officials did not approve of civilian personnel working on the flight line, due to perceived security problems. As a result, several GLASCO personnel did not gain access to the base for two weeks, further disrupting the OSA operations. Also, with the aircrews initially housed in tents at the base, communications between the Air Force commanders and the GLASCO support personnel proved difficult at best and sometimes jeopardized missions.[70] All these problems occurred under relatively benign circumstances. Had Riyadh become an early target of Iraqi attacks, there is no guarantee that the civilians would have continued supporting OSA operations.

Command and Control. The 1612th MASP maintained an operations center in a tent near the airlift control center (ALCC) near the airfield flight line. For command purposes, the OSA forces fell under the MAC COMALF who, in turn, worked for the CENTAF commander, General Horner. However, the operations personnel received operational tasking directly from a single scheduler in the CENTAF TACC, located near the ALCC and 1612th MASP's operations tent complex.[71]

The CENTAF staff gave the OSA scheduling job to Maj T. B. Williams, a member of the Air-Ground Operations School (AGOS) staff and one of the first officers to arrive in Saudi Arabia in early August 1990. During most of the OSA Gulf deployment, Major Williams admirably served as the TACC OSA scheduler despite having no previous experience with OSA. Without any command level validators, Major Williams instead collected all the OSA support requests from Air Force or CENTCOM staff personnel. Finding the peacetime five-level priority system was not conducive to wartime operations, he initially scheduled missions on a first come-first served basis, mostly supporting logistics needs in the AOR. However, any requirements to fly high-ranking DVs took precedence and sometimes caused the postponement or cancellation of other missions. Before long Major Williams instituted a fairly set airline-type mission schedule averaging six lines each day—four during the day and two at night—to support the regular customers. In addition, add-on or special missions carried passengers and cargo that, because of time or mission constraints, could not fly on one of the regularly scheduled flights.[72]

Supporting the Users. During the six months of Operation Desert Shield and 40+ days of Operation Desert Storm, users needs often changed. In response, OSA's support mission changed as well, from its initial emphasis on logistics missions through a shift towards passenger and DV flights to a role rooted in OSA's Vietnam heritage—courier and intelligence support.

When OSA forces first arrived in the Gulf, few staff personnel understood its role or how to use the airlift. One exception was the ALCC's logistics (LG) and transportation (TR) support center, located next to the 1612th MASP's operations center tent in Riyadh. The LG and TR staffs made excellent use of OSA from the beginning. Numerous missions carried spare parts to bases throughout the AOR when the items were not large enough to require a C-130 to carry them. The parts could be flown on a regularly scheduled OSA flight or, if delivery was especially time-critical, transported via an add-on mission.

In addition, the C-21As carried opportune cargo on nearly every mission. The LG and TR personnel also used OSA to distribute thousands of vehicle technical orders to bases in the AOR. Last, but not least, OSA occasionally served as the last link in the famous Desert Express delivery system wherein MAC promised a critical item delivered to Charleston AFB, South Carolina, could be shipped to the Gulf via a daily C-141 mission and received by the addressee in under 24 hours.[73]

The other major user in the initial stages of Operation Desert Shield was CENTAF and the TACC itself. Initially without any secure means to transmit the daily air tasking order (ATO), CENTAF relied on the OSA C-21As to deliver the ATO to most of the bases in the AOR. When the secure data transmission network did become operational, OSA reverted to a backup role—available if needed—and was on alert to perform this vital mission during Operation Desert Storm.[74] As far as General Horner was concerned, ATO distribution within the time constraints was OSA's primary wartime mission in the Gulf.[75]

Other users included CENTAF and CENTCOM intelligence personnel.[76] As in Vietnam, OSA carried intelligence information from field units to the headquarters and returned finished intelligence products to the users in the field. Electronic transmission of intelligence materials had obviously not completely eliminated the need for aircraft to carry out this important mission. Towards the end of December 1990 and through the end of the ground war in February 1991, OSA picked up more and more courier and intelligence support missions.

By late October 1990, the OSA mission settled down to a more normal role of carrying DVs, staff personnel, and light cargo on a fairly set schedule with occasional add-on missions to support unique needs. One regular passenger was the commander of Air Force Special Operations Command (AFSOC) forces. Although only a colonel, his important position necessitated a lot of support and priority travel on a par with a two-star flag officer.[77] Unfortunately, other staff personnel found out about the OSA system and sometimes abused it. Knowing they probably would not receive OSA support due to their relatively low rank, other colonels or lieutenant colonels resorted to name-dropping by telling the OSA scheduler that the mission was CINC requested (CENTCOM commander in chief, Gen H. Norman Schwarzkopf) inferring that the general was going to be a passenger. However, at show time, only a colonel and/or lesser rank staff personnel would show at the aircraft for a mission that did not deserve a special OSA flight.[78] When OSA supervisors brought this abuse to the attention of the COMALF, Brig Gen Edward Tenoso, the general raised the issue with his superiors and, by mid-December 1990, the problem mostly ended.[79]

On the afternoon of 16 January 1991, the eve of the air campaign, OSA C-21As sat alert and ready to carry the ATO to outlying bases in case the data transmission network encountered difficulties, thereby fulfilling the CENTAF commander's primary wartime mission. However, the OSA planes were not needed for this role. Another C-21A was initially tasked to fly as a weather ship for the first night's air missions. Perhaps planners thought a C-21 flying

near the Saudi-Iraqi border would not raise suspicions of Iraqi controllers. However, CENTAF canceled this mission at the last minute. A C-21A did bring back the first gun camera films from the F-117 base to Riyadh showing the spectacular footage of the stealth fighters' missions over downtown Baghdad. For the remainder of the air and ground wars, two C-21As flew missions each night picking up gun camera films and intelligence photographs from the U-2 and RF-4 bases. Other OSA C-21As continued flying courier missions delivering intelligence products and orders to bases throughout the AOR.[80]

After Operation Desert Storm came to its successful conclusion, OSA C-21As immediately began carrying DVs and staff personnel into Kuwait City. In addition, the jets carried passengers over the war-torn Kuwaiti countryside on intelligence, as well as sightseeing missions, showing passengers the effects of the devastating ground war. However, flying around Kuwait was a difficult proposition, especially at first. Between the marginal visibility caused by the hundreds of oil well fires and the absence of a viable air traffic control system over Kuwait, OSA aircrews relied on old fashioned pilotage and the see-and-avoid principle to safely navigate over Kuwait.[81]

Follow-up and Redeployment. The end of the fighting unfortunately did not mean an end to the OSA mission. Instead, OSA forces shifted gears to supporting the massive redeployment effort. Missions flew between bases in the AOR as well as to and from Riyadh carrying commanders and staff personnel planning the operation's return phase.

By the end of March 1991, the OSA work load had fallen off considerably. Therefore, CENTAF released the C-21As to return to the CONUS. Since the Barksdale detachment deployed first to the Gulf, it was the first to return home, arriving back in Louisiana on 29 March 1991. The Maxwell detachment soon followed with two of its planes landing in Alabama on 8 April 1991 and the third jet following soon after. One of the C-21As that replaced the original Barksdale jets stayed behind in Riyadh to support the remaining US staff needs. One CONUS-based C-21A is still deployed to Saudi Arabia (now at Dhahran) and flown by TDY aircrews from various CONUS OSA units. However, the airframe is routinely swapped out for another CONUS C-21A when major maintenance is required.[82]

C-12F Support

Although no USAF OSA C-12Fs deployed from the CONUS to the Persian Gulf AOR, the Huron force still participated in several ways. As mentioned earlier, several Ramstein C-12Fs did deploy to Riyadh supporting ARCENT but eventually moved up to Incirlik, Turkey, where they remained until well after the war ended. Meanwhile, CONUS C-12F support included shuttling MAC strategic airlift aircrews between bases along the east coast of the US to meet strategic aircrew movement requirements. Finally, about a dozen CONUS C-12F pilots deployed to Saudi Arabia in August of 1990 to augment the US military training mission (USMTM) in Riyadh. Although fully qualified aircraft commanders in the F model C-12, these pilots were relegated to

flying as copilots for the USMTM pilots, ostensibly due to the minor differences between the C and F models.[83] However, the USMTM C-12Cs technically belonged to the US Army so interservice jealously may also have been present. Still, without this important augmentation, the USMTM C-12Cs could not have flown nearly as much as they did during the conflict. As with the C-21As in the AOR, the low peacetime crew ratio made pilot augmentation necessary to meet wartime utilization rates. If the CONUS C-12F fleet had been fully committed at the same time, the extra pilots would not have been available to support the USMTM planes.

Flying Time Summary

The 375th MAW histories covering the July 1990 through June 1991 period show OSA flying hours flown while supporting Operations Desert Shield/Desert Storm. Table 30 shows these hours for the 375th MAW OSA aircraft. Unfortunately, the histories do not indicate how many hours were flown by the two deployed C-21A units and how many were flown by C-21A units on Desert Shield/Desert Storm (DS/DS) support missions in the CONUS. However, since no 375th MAW C-12Fs deployed to the Gulf, the C-12F hours shown in table 30 are just for DS/DS support missions in the CONUS.[84]

Table 30

Total Flying Hours: Operations Desert Shield/Desert Storm

Month	C-21A	C-12F	Total
Sep 90	536.1	158.8	694.9
Oct 90	668.8	15.2	684.0
Nov 90	579.3	7.7	587.0
Dec 90	683.5	34.8	718.3
Jan 91	704.7	10.3	715.0
Feb 91	657.0	10.6	667.6
Mar 91	667.8	21.5	689.3
Apr 91	———	———	230.6
Totals	4,497.2	258.9	4,986.7

Note: The source did not give the April breakdown of hours by aircraft so the total hours for each individual aircraft do not include April's figures.

Source: *History, 375th MAW, 1 July-31 December 1990*, 71; and *History, 375th MAW, 1 January-30 June 1991*, 75.

In addition, the figures in table 30 are obviously incomplete. There are no official data for August 1990, the first month of the Barksdale detachment's deployed to Saudi Arabia. Also, there is little doubt that CONUS C-12Fs and C-21As flew some DS/DS support missions in the CONUS during August 1990, but the 375th MAW histories do not detail any such accomplishments.

Although not shown in table 30, the 375th MAW histories also presented total OSA mission (and training) hours for both C-21As and C-12Fs during

the same period. Interestingly, the listed C-12F hours flown in direct support of DS/DS represent approximately 10 percent of the total mission hours flown by the entire CONUS C-12F fleet during the September 1990 through March 1991 time frame. Meanwhile, the C-21A DS/DS hours in table 30 portray slightly over 20 percent of total C-21A OSA mission hours during the same period. Note that mission hours do not include dedicated training hours.

The Maxwell OSA unit's flight records contained original computer printouts delineating flying time by aircraft, mission (including passengers' names), and pilot. Figures from those products are shown in table 31 and include a breakdown of flying time and sorties for both the Maxwell and Barksdale units along with the passengers and cargo numbers carried. Unfortunately, figures for the Barksdale unit were not available for September, November, or December 1991. Therefore, overall totals for each category are incomplete but do give a fairly clear picture of the effort.

Table 31

Flying Hours, Sorties, Passengers, and Cargo by Unit: Operations Desert Shield/Desert Storm

	Hours			Sorties		
Month	Barksdale	Maxwell	Total	Barksdale	Maxwell	Total
Oct 90	415.3	260.3	675.6	377	242	619
Nov 90	—	223.6	223.6	—	190	190
Dec 90	—	221.9	221.9	—	172	172
Jan 91	457.2	247.4	704.6	362	218	580
Feb 91	471.5	216.4	687.9	422	198	620
Mar 91	314.0	239.8	553.8	251	201	452
Totals	1,658.0	1,409.4	3,067.4	1,412	1,221	2,271

	Passengers			Cargo (pounds)		
Month	Barksdale	Maxwell	Total	Barksdale	Maxwell	Total
Oct 90	526	296	822	10,340	7,760	18,100
Nov 90	—	335	335	—	2,625	2,625
Dec 90	—	204	204	—	4,290	4,290
Jan 91	492	265	757	19.465	8,235	27,700
Feb 91	461	214	675	23,190	7,234	30.424
Mar 91	450	332	782	6,145	6,000	12,145
Totals	1,929	1,646	3,575	59,140	36,144	95,284

Source: Detachment 3, 1402d MAS—original computer printouts of daily/monthly totals.

There are some discrepancies between the totals in tables 30 and 31. It is probable that the figures found in the official histories are more accurate since they might represent flight data revised after the computer products were produced. Still, the two data sources offer figures that are close to each other so the general trends and conclusions are still valid.

Despite the missing Barksdale figures, several points stand out in table 31. First, dividing the total hours by sorties gives an average sortie length of 1.16 hours. This relatively low figure indicates the distances involved were fairly short, less than 500 miles long, and therefore could probably have been accomplished more efficiently by C-12F aircraft. After all, the C-12Fs were purchased with the intent of operating them on sorties of less than 500 miles, leaving the C-21As to fly the longer missions where their greater speed offset their higher operating costs. Indeed, the two C-12Fs from Ramstein that deployed to Incirlik were especially well suited for the short hops within Turkey. Secondly, the OSA missions in the Gulf averaged just 1.36 passengers and 36.19 pounds of cargo per sortie. These rather low usage rates are somewhat misleading since many missions carried ATO and other cargo only from Riyadh to the outlying bases and returned empty. Still, the figures also seem to show that the cheaper-to-operate C-12Fs might have been a better choice for Persian Gulf operations. However, the C-21A is a much faster aircraft than the C-12F and time was often critical in delivering senior commanders and other DVs, the ATOs, and intelligence information to their destinations. Possibly a mix of four C-21As and four C-12Fs would have been the best choice for Air Force OSA support in the Gulf.

In March 1993, the Air Force responded to a Joint Staff tasking with a memorandum listing all known OSA hours flown in support of Operations Desert Shield/Desert Storm.[85] On a one-page attachment to the memo, the Air Force listed flying time for CONUS-based and European-based OSA aircraft. Figures for C-21As and C-12Fs from that attachment are shown in table 32 and were rounded off to the nearest whole hour in the original memo.

Table 32

Desert Shield/Desert Storm OSA Flying Hours

Month	C-12 CONUS	C-21 CONUS	C-21 Deployed	C-12 Europe	C-21 Europe	Totals
Aug 90	147	246	303	112	89	897
Sep 90	159	115	506	133	—	913
Oct 90	15	6	663	121	—	805
Nov 90	8	—	579	113	9	709
Dec 90	35	795	684	265	29	1,808
Jan 91	10	103	701	170	150	1,134
Feb 91	10	3	655	150	226	1,044
Mar 91	22	—	668	—	—	690
Apr 91	—	—	231	—	—	231
May 91	—	—	153	—	—	153
Totals	406	1,268	5,143	1,064	503	8,384

Source: Memorandum, Headquarters USAF/XOFM, to Joint Staff/J-8 Forces Division, subject: OSA Flying Hours in Support of Operations Desert Shield/Storm, 17 March 1993, 1, with one attachment.

The figures in table 32 tend to corroborate the data in table 30. The CONUS C-12F hours in tables 30 and 32 agree almost exactly. Also, the C-21A hours in table 30 are close to the figures for the CONUS C-21A hours shown in table 32 suggesting that the table 30 figures are indeed solely for deployed C-21A missions.

Unfortunately, there were some addition or typographical errors in the Headquarters USAF data. The memo showed only 551 total CONUS C-21A hours despite also listing 795 hours just for December 1990. Either the 795 figure is in error or the author did not add properly. The deployed C-21A column in the memo also contained a two-hour addition error. Although neither error renders the memo useless, the errors were carried through into a narrative discussion where the Air Force used the incorrect totals to summarize OSA DS/DS participation.

The bottom line is that OSA contributed approximately 8,000 flying hours to Operations Desert Shield/Desert Storm, mostly with deployed C-21As, but with CONUS and European OSA aircraft as well. Although 8,000 hours were probably small compared to the total flying effort, the OSA missions flown provided commanders, staff personnel, and ultimately every participant with critical support, both in the AOR and the CONUS.

Sister-Service Operational Support
Airlift in the Persian Gulf

The Air Force was not the only service with OSA support in the Persian Gulf. The three other services all deployed OSA aircraft to the AOR. However, each maintained tight control on their organic airlift, not allowing it to come under the operational control of the joint force air component commander (JFACC) as the Air Force OSA did.

The US Marines sent two C-12s (of its 18 total) and four aircrews from El Toro, California, to Bahrain International Airport in August 1990 and assigned them to the 3d Marine Air Wing (MAW), I Marine Expeditionary Force (MEF). From 25 August 1990 to 10 May 1991, these planes logged 1,296.9 flying hours and carried 1,816 passengers and 59,690 pounds of cargo. The Marine C-12s made nightly intelligence runs between Riyadh, Jubail, King Abdul Aziz Airport, and Shaikh Isa. In addition, the planes flew command and control missions throughout Oman, the United Arab Emirates, Saudi Arabia, and, eventually, Kuwait. The Marine OSA secondary mission was personnel and cargo support.[86]

Marine OSA C-12s are assigned to specific bases under the commander, Air Bases, and are intentionally not included in regional/global OPLANS. Instead, "these assets are part of the Marine Support Package deployed with the MAGTF [Marine Air-Ground Task Force] and are retained under Marine control to fulfill immediate/responsive logistics and support missions in the AOR."[87] Indeed, the Marines feel "operational assignment/control for Marine OSA is vital to MAGTF support."[88] Thus, the Marines are not likely to easily give up operational control of their OSA to the JFACC as the Air Force did.

The US Navy sent five C-12s from the CONUS to Bahrain in December 1990 and assigned them to the commander, 6th Fleet. Between 1 December 1990 and 31 May 1991, the Navy planes flew 10,768 sorties on 2,692 missions logging 3,276 hours while carrying 1,991 passengers and an unknown amount of cargo.[89]

With 85 C-12s in its inventory, the US Navy maintains one or two planes at every major naval base. Like the Marines, the Navy mans its OSA C-12s with air station staff pilots who perform the OSA mission as a collateral duty. Again, as with the Marines, the Navy considers its OSA as that part of its organic air logistics system that provides base and command support in a demand sensitive mode. Therefore, Navy OSA supported the Navy's needs in the Persian Gulf without any interference or attempt to control it by the JFACC.[90]

The US Army deployed six C-12s from the CONUS as well as three C-12s from Heidelberg, Germany, to the AOR.[91] In addition, the Army owned the USMTM C-12Cs in Saudi Arabia. Deployed Army C-12s flew 2,159 hours in the AOR on 2,564 missions carrying 9,237 passengers and 125,952 pounds of cargo.[92]

The planes operated out of Riyadh and Dhahran, Saudi Arabia, and came under the operational control of the Army's Support Command, headquartered in the AOR at Dhahran.[93] An Army reserve major working for the Support Command scheduled the Army OSA C-12s.[94] Like the Navy and Marines, the Army kept a tight hold on what it considered to be its own organic airlift.

However, unlike the other services, in October 1992, the Army moved away from base-assigned OSA to a single command responsible for the command and control of all CONUS Army OSA. The OSA command is headquartered at Fort Belvoir, Virginia, and commands an active duty fleet of 47 C-12s and 26 U-21s dispersed among 16 units in three geographic regions. In addition, the Army reserves now maintain 29 U-21s formed into three aviation companies available for deployment during contingencies. However, no U-21s deployed to the Gulf. One other important difference between the Army OSA and the other services is that all Army OSA pilots are former helicopter pilots. Therefore, they are all highly experienced crews well-trained in flying VFR at low levels and have, by far, the most combat-oriented attitude of the services OSA forces.[95]

Between all four services, about two dozen OSA aircraft deployed to the Persian Gulf to support Operations Desert Shield/Desert Storm. Clearly the Army, Navy, and Marines used their OSA aircraft solely to support their own individual service needs, maintaining command and operational control. Meanwhile, the Air Force C-21As ended up working directly for the JFACC as part of the unified command, CENTCOM. This disparity was one of the major lessons learned from the Gulf war experience.

Lessons Learned

Despite the success of Air Force OSA in the Gulf, postwar analysis indicates a number of shortcomings that hindered efficient operations. Had the conditions been more threatening, it is doubtful OSA could have succeeded in providing very effective support. OSA forces could well have met with disaster.

Command and Control. The inefficient and doctrinally incorrect command and control setup was highlighted after the war by USCINCTRANS, Gen Hansford T. Johnson, and in the Joint Universal Lessons Learned System (JULLS). General Johnson observed during an interview that "operational support airlift should not have been either [assigned to a CINC] but US Transportation Command was tasked for and responded to OSA requirements."[96]

Meanwhile, the JULLS Report Number 92135-82729 issued on 24 April 1992 observed, "Desert Shield command relationships for OSA have not been consistent with doctrine and have probably resulted in degraded airlift capability."[97] The JULLS notes that the COMALF chopped the C-21As to the CENTAF/LGT [logistics] and that although the COMALF flight followed the planes, the "mission tasking was from CENTAF [via the TACC] directly to the operating unit."[98] Meanwhile, the USMTM C-12s were not under the operational control of the COMALF and that, on any particular day, a C-21A, a C-12, and a C-130 "could have flown the same route without coordination capability and potentially wasting airlift."[99] The recommended action was to: "consolidate these [OSA] forces under the management of a COMALF with a subordinate staff in the Airlift Control Center."[100] Unfortunately, the report made no mention of the OSA belonging to the other services. However, the implication is clear that all OSA forces deployed to a theater should be consolidated for operational control purposes under a single, unified airlift control system.[101]

Chemical Warfare. Air Force OSA forces in the Persian Gulf were not prepared to operate in a chemical environment. If the Iraqi forces had fired chemical weapons on the OSA base at Riyadh or any of the forward bases where OSA operated, the C-21As and their crews would have been forced to divert to a safe location or, worse, they might have perished. The problem was not so much with training as with equipment.

In the Persian Gulf nearly all OSA personnel carried, and when threatened wore, a protective ground chemical defense ensemble (GCDE) suit. Breathing in the GCDE is accomplished by inhaling air that has passed through filters on the front or sides of the protective hood. Maxwell unit's aircrews carried one GCDE with them when they deployed from the CONUS.[102] All MAC OSA crews received initial and yearly refresher training in GCDE wear and operations, but the Ramstein unit regularly trained in the GCDE due to the European threat.[103]

Normally, flight personnel wear a slightly different protective suit known as an aircrew chemical defense ensemble (ACDE). This suit incorporates an oxygen mask which connects to the aircraft's uncontaminated oxygen system enabling the aircrews to operate in a chemical environment either on the ground or in the air, so long as they are in the plane. To get from their operations center to and from the aircraft, the aircrews plug their oxygen masks into a small, portable filter pack which provides protection on the ground.[104] However, the pack is not designed, intended, or tested for in-flight use in the C-12F or C-21A. If the aircraft lost pressurization or if prolonged

exposure to chemicals was encountered, it is doubtful the filter packs would provide sufficient protection to the wearers.

In addition to the oxygen connection, the ACDE mask provides a communication connection allowing the aircrews to hook into the aircraft's radio system. Without such a device, the crews are unable to communicate with anyone outside (or inside) the aircraft. Obviously, such a shortcoming makes effective operations in a chemical environment impossible.

Unfortunately, Air Force OSA aircraft that deployed to the AOR did not have the necessary oxygen and communications connections in the aircraft. The aircrews were issued the ACDE suits but knew they could only use the filter pack if chemicals were detected in the area. Although the filter packs could provide some protection in flight, the crews could not communicate with ground or air controllers.[105] Even talking in the cockpit between the two pilots, much less communicating with passengers, would have been difficult if not impossible. If the Iraqis had struck the Riyadh airport with chemical weapons atop their Scud missiles, the C-21As would have been forced to move their operations to a base outside the Scud's range. However, the planes still could not have transited any chemically contaminated base or area thereby severely limiting mission capabilities.

Meanwhile, the GLASCO maintenance personnel did have ground chemical ensemble suits available. However, their normal training in the CONUS was limited at best and probably treated the suit as a nuisance with little concern that they would ever have to actually wear it, much less perform aircraft maintenance in 115-degree desert heat under a real chemical threat.[106]

Although the Air Force personnel were certainly better trained and prepared for chemical operations than the GLASCO people, it is very doubtful that either the aircrews or the maintainers could have successfully operated on the ground in a real chemical environment in the desert. Certainly the C-21As could not have flown any missions under actual chemical circumstances.[107] This potentially critical lack of operational capability came as a shock to the senior US military officials in the Gulf and, after the war, prompted MAC planners to finally consider modifying the OSA planes.[108]

Navigation Capabilities. As discussed earlier, the C-21As navigate based on aircraft systems that are dependent upon ground-based transmitting facilities. This situation poses no problem during normal OSA operations but the Gulf War presented several new problems.

First, flying across the ocean during the deployment meant depending solely on the C-21A's single UNS. The possibility of an onboard system failure or even degraded reception of the very long-range radio signals made overwater flight hazardous. Once in the Gulf region, signal reception was not very reliable at best and basically nonexistent below 8,000 feet, thereby forcing the aircrews to depend on short-range (less than 200 NM) navigation aids.[109]

The second problem ties into the first. The COMALF, Brig Gen Edward Tenoso, knew that once Desert Storm started, CENTCOM planned to block out the AOR's ground-based navigation aids in the region north of 24 degrees north latitude. Recognizing the C-21As could not operate in the Gulf without

these short-range aids, in December 1990 the general requested inertial navigation systems (INS) be installed in the deployed aircraft.[110] The INS relies on highly accurate, onboard gyroscopics, not on ground-based navigation aids. Unfortunately, there were no spare INS systems available so MAC was forced to divert eight INS sets intended for CONUS C-9s and send them to the Gulf. Maintenance personnel installed the systems in mid-January, just before the air war began.[111] Meanwhile, pulling the INS sets off the CONUS C-9s restricted those aircraft from deploying overseas, obviously an important operational limitation for them.

Most other aircraft that deployed to the Gulf had INS sets originally built into the aircraft or were modified with the system. In addition, the tactical airlift crews were well trained in low-level navigation procedures, including VFR chart reading. Unfortunately, due to the lack of adequate combat aircrew training/tactical VFR training (CAT/TVT) programs, the OSA aircrews were not prepared to draw VFR charts, much less navigate in the desert, based solely on VFR procedures and techniques. This inadequacy dismayed the Air Force chief of staff, General McPeak, when he flew on an OSA mission in the Gulf and questioned the aircrew as to their lack of VFR charts.[112]

Admittedly, there were not many usable ground references by which to navigate in the desert. Still the complete lack of VFR training further limited OSA operations in the Gulf. In addition, had the war begun much sooner, the navigation aid blackout would have meant OSA aircrews could not have accurately navigated in the Gulf using the C-21As onboard navigation systems. It was indeed fortunate that personnel in the Gulf recognized this critical limitation in time to correct the problem overlooked by MAC planners. However, MAC removed the INS sets from the eight C-21As as soon as they returned from the Gulf and reinstalled the systems in the C-9s.[113] To date, the C-21As still have no internal navigation capability and no VFR training is conducted.

Wing Support. According to the 375th MAW, OSA operations in the Gulf

> were not conducted in accordance with the designed OSA support concept. The OSA units trained and evaluated their wartime mission taskings by deploying their assets within a MAC airlift wing. They were not designed to operate autonomously and had to use the airlift's organizational structure to support the OSA missions.[114]

Instead, the ALCC provided as much support as possible even though tasking came down from the CENTAF TACC. With no host airlift wing, the OSA forces lacked their normal intelligence, flight planning, personnel, and maintenance support. OSA forces had never practiced operating under such circumstances and found they needed dedicated, deployable technicians to provide the required support.[115]

Contractor Maintenance. The last major lesson learned, one mentioned earlier, concerns the civilian maintenance contract and personnel. The fact that some civilian contractors refused to deploy to the war zone should not have surprised anybody. This problem itself is enough to consider replacing the CLS system with Air Force maintenance personnel.

Another difficulty with the CLS in the Gulf was that the "deployed [Air Force] mission commanders had no control" over the CLS contract.[116] GLASCO personnel did not work directly for the Air Force commander which therefore limited his authority over the maintainers. In effect, GLASCO had the ability to control mission success based on whether their support met with the contract's requirements. The 375th MAW concluded that "the contractual arrangement for civilian maintenance for Air Force assets with a mobility commitment was not appropriate for contingency operations."[117]

The Persian Gulf Experience: A Summary

There is no doubt that Air Force OSA successfully performed its wartime mission during both Operations Desert Shield and Desert Storm. C-21As and C-12Fs from Ramstein began operating in the AOR within a few days of the Iraqi invasion of Kuwait. Meanwhile, eight CONUS C-21As, as well as a dozen C-12F pilots deployed to Saudi Arabia in the early stages of the contingency. All the deployed forces worked together to perform their assigned wartime mission in a safe, professional manner. Their experiences and contribution to the overall war effort, while comparatively small, was nonetheless vital in providing senior commanders with the time-critical movement of passengers and cargo within the AOR. Although the war would certainly have been won without OSA, the operations would have been considerably more difficult without OSAs reliable, short-notice transportation system.

Still, OSA experienced a number of shortcomings in the desert. These problems included inadequate aircrew chemical protection and capabilities, a lack of reliable, self-contained navigation aids, an inefficient and doctrinally unsound command and control setup, and insufficient wing and maintenance support. That OSA succeeded despite these drawbacks is a testimonial to the spirit, dedication, and professionalism of the OSA commanders, aircrews, and operations personnel.

However, luck also played a big part in OSA operations in the Persian Gulf. Many of the limitations OSA experienced were rendered relatively unimportant by the lack of enemy attack on the home base or destination airfields. In the next contingency, the US and OSA may not be so lucky. It is time for the Air Force to get serious about adequately equipping, training, and basing its OSA forces to perform the wartime mission in the future where a true threat environment, either conventional or terrorist, exists. Chapter 6 presents recommendations to make OSA ready for that future.

Notes

1. The term "OSA" was not coined until well after Vietnam but is used throughout this chapter to avoid confusion.

2. Ray L. Bowers, *The United States Air Force in Southeast Asia: Tactical Airlift* (Washington, D.C.: Office of Air Force History, 1983), 7.

3. Ibid., 401.

4. Carl Berger, ed., *The United States Air Force in Southeast Asia, 1961–1973: An Illustrated Account*, rev. ed. (Washington, D.C.: Office of Air Force History, 1984), 212.

5. Bowers, 406.

6. *History of Seventh Air Force, 1 January–30 June 1968*, vol. 1, 469. (Note: The original document was classified Secret but was declassified by the Southeast Asia (SEA) War Records Review Declassification Team on 8 August 1991.)

7. Bowers, 406.

8. Ibid., 408.

9. *History of Seventh Air Force, 1 January–30 June 1968*, 469.

10. Ibid., 470.

11. Ibid.

12. *History of Seventh Air Force, 1 January 1966–30 June 1967*, vol. 1, 68, 313. (Note: The original document was classified Secret but was declassified by the SEA Declassification and Review Team on 8 August 1991.)

13. Seventh Air Force Flight Operations (7 AF/HC-FO), "SCATBACK Courier Study," April 1969, 2. (Note: The original document was classified Secret but was declassified (no date) by the SEA Declassification and Review Team.)

14. *History of Seventh Air Force, 1 January–30 June 1968*, 475.

15. Ibid.

16. "SCATBACK Courier Study," 2.

17. *History of 56th Special Operations Wing, January–March 1973,* vol. 1, xii. (Note: The original document was classified Secret/NoForn but was declassified by the SEA War Records Review Declassification Team on 26 August 1991.)

18. "SCATBACK Courier Study," April 1969, 2.

19. Ibid., 2–3.

20. Ibid., 3.

21. Ibid.

22. Ibid.

23. Ibid., 4–5.

24. Ibid., 5.

25. Ibid., 11.

26. Ibid., 13.

27. Ibid., 19.

28. Ibid., 20–21.

29. Ibid., 25.

30. *History of 56th Special Operations Wing (SOW), January–March 1973*, vol. 1, 4.

31. *History of 56th SOW/SCATBACK, 5–28 February 1973* (U), 1, 3. (Secret) Information extracted is unclassified.

32. Ibid., 3.

33. *History of 56th SOW, January–March 1973*, 52.

34. Ibid.

35. Ibid., 54.

36. *History of 56th SOW/SCATBACK, 5–28 February 1973*, 3.

37. *History of 56th SOW/SCATBACK, 1–31 March 1973*, 2.

38. Ibid., 1.

39. Ibid., 5.

40. *History of 56th SOW/SCATBACK, 1 October–31 December 1974* (U), vol. 2, 6. (Secret) Information extracted is unclassified.

41. Headquarters United States Air Force, *History of USAF Flying Hours (HUFH) for Planning and Reference: FY 1974* (Washington, D.C.: Data Services Center), 46–47 (Note: Original document was classified Secret but was downgraded on 1 July 1975 by Headquarters USAF/PRPL letter); and *History of USAF Flying Hours (HUFH) for Planning and Reference: FY 1975* (Washington, D.C.: Data Services Center), 46–47.

42. *History of 56th SOW/SCATBACK, 1 January–31 March 1975*, vol. 1, 24. (Note: The original document was classified Secret but was automatically declassified on 31 December 1983.)

43. Ibid., vol. 2, 3.
44. Ibid., vol. 1, 24.
45. *History of 432d TFW/SCATBACK, 1 July–30 September 1975* (U), 2–4. (Secret) Information extracted is unclassified.
46. Ibid., 4.
47. Ibid., 5.
48. Ibid.
49. *History of 432d TFW, 1 July–23 December 1975*, vol. 3, *Squadron Histories* (U), i. (Secret) Information extracted is unclassified.
50. Headquarters United States Air Force, *History of USAF Flying Hours (HUFH) for Planning and Reference: FY 1966–FY 1972* (Washington, D.C.: Data Services Center).
51. *History of Military Airlift Command, 1 January–31 December 1990* (U), 146, 150, 155. (Secret) Information extracted is unclassified.
52. Lt Col Kenneth Byrd, Headquarters AMC/LGTX, interview with author, 24 July 1992.
53. Lt Col James Steele, JCS J1/P3, interview with author, 24 July 1992; and Maj John Grimes, Headquarters USAF/XOFM, interview with author, 24 July 1992.
54. Steele interview.
55. Lt Col Tom Horgan, commander, Detachment 6, AFSOC, interview with author, 16 May 1994.
56. Ibid.
57. Ibid.
58. Ibid.
59. Lt Col David M. Willson, Headquarters AMC/TACC, interview with author, 4 May 1993.
60. Ibid.
61. Ibid.
62. Ibid.
63. Ibid.
64. Ibid.
65. Ibid.
66. Ibid.
67. Ibid.
68. Ibid.
69. Ibid.
70. Ibid.
71. Byrd interview.
72. Willson interview.
73. Byrd interview.
74. Willson interview.
75. Maj Gen Edward Tenoso, USTRANSCOM J3/J5, interview with author, 7 October 1992.
76. Ibid.
77. Ibid.
78. Ibid.
79. Willson interview.
80. Ibid.
81. Ibid.
82. *History of 375th MAW, 1 January–30 June 1991* (U), 33. (Secret) Information extracted is unclassified.
83. Lt Col Stephen K. Raney, 375th MAW/ADO, interview with author, 21 July 1992.
84. *History of 375th MAW, 1 July–31 December 1990* (U), 71. (Secret) Information extracted is unclassified; and *History of 375th MAW, 1 January–30 June 1991*, 75.
85. Memorandum, Headquarters USAF/XOFM, to Joint Staff/J-8 Forces Division, subject: OSA Flying Hours in Support of Operations Desert Shield/Storm, 17 March 1993, 1, with one attachment.
86. Headquarters USMC deputy chief of staff for Aviation to JCS, letter, subject: Wartime Requirements for Operational Support Airlift (OSA) Aircraft and Other Aircraft Configured to Passenger Use, 16 March 1993, 1.

87. Ibid., 2.
88. Ibid.
89. Capt William H. Roeting, USN, Headquarters USN/N880.6, interview with author, 22 March 1992. (Note: The Navy and Air Force differ on the definitions for sorties and missions. The Navy term for *sortie* is the same as what the Air Force calls a mission. The Navy term for *leg* is the same as an Air Force sortie [a takeoff and landing]. To avoid confusion, the Navy data was altered to use Air Force terminology.)
90. Ibid.
91. Maj Michael Borland, USA, Headquarters USA DACS/DMS, interview with author, 24 July 1992; and Byrd interview.
92. Memorandum, Headquarters US Army/ADCSOPS(JA), to Joint Staff/J-8 Forces Division, subject: Wartime Requirement for Operational Support Airlift (OSA) Aircraft and Other Aircraft Configured for Passenger Use, 18 March 1993, 1.
93. Capt Robert L. Marion, USA, US Army OSA Command/Assistant S-3, interview with author, 22 March 1993.
94. Byrd interview.
95. Marion interview; and briefing slides, "Army Operational Support Airlift," presented to USTRANSCOM OSA interservice meeting by Maj Michael Borland, USA, 4 May 1993.
96. Dr James K. Mathews and Dr Jay H. Smith, "General Hansford T. Johnson, commander in chief, United States Transportation Command and Air Mobility Command: An Oral History" (Scott AFB, Ill.: Offices of History, USTRANSCOM and Air Mobility Command, December 1992), 53.
97. JULLS Report Number 92135-82729, "Operational Support Airlift (OSA) Desert Shield Command Relationships," JCS/RAP, 24 April 1992, 1.
98. Ibid.
99. Ibid.
100. Ibid.
101. Since the report was issued, the Director of Mobility Forces (DIRMOBFOR) has replaced the COMALF as the airlift manager for the JFACC and the Air Mobility Element (AME) has replaced the ALCC.
102. Willson interview.
103. Steele interview.
104. Maj Roger Muirhead, Headquarters MAC/DOV, interview with author, 22 July 1992.
105. *History of 375th MAW, 1 January–30 June 1991*, 20.
106. Willson interview.
107. Tenoso interview.
108. Maj Gen Robert E. Dempsey, Headquarters MAC/CS, interview with author, 21 July 1992.
109. *History of 375th MAW, 1 January–30 June 1991*, 21.
110. Tenoso interview.
111. Willson interview.
112. Tenoso interview; and Willson interview.
113. Raney interview.
114. *History of 375th MAW, 1 January–30 June 1991*, 19.
115. Ibid.
116. Ibid., 20.
117. Ibid.

Chapter 6

Summary and Recommendations

From its infancy in World War I through its most recent experiences during Operations Desert Shield and Desert Storm, operational support airlift has provided important, even critical airlift support to commanders and their staffs during both peacetime and wartime. However, OSA has long been a lightning rod for congressional, DOD, and even internal Air Force criticism, often questioning OSA's mission in peacetime as well as its viability and necessity during wartime. The Persian Gulf War experiences, combined with the recent divestiture and force drawdowns, raise even more doubts as to OSA's future.

To erase these doubts, we must answer several questions. First, does the Air Force need OSA in wartime? Congress and the DOD are clear in their direction that OSA must be justified on the basis of its wartime mission, thus making peacetime needs secondary. Therefore, if there is no viable wartime role, then there is no sufficient justification for a peacetime OSA force. Thus, OSA's wartime missions must be necessary and well-defined. Second, if the Air Force needs OSA in wartime and can define its mission, how can the Air Force best organize, train, and equip OSA in peacetime to perform its wartime missions? After all, properly organizing, training, and equipping its forces for employment is the Air Force's primary mission. Actually employing the forces in wartime is not normally an Air Force mission, but the role of the unified commands, which raises the third question. Who should employ OSA forces—the Air Force or the unified commands? Given recent experiences and proposals, this question is not as cut and dried as one might think. Answering these three questions paints a clear picture of OSA's future and is the core purpose of this paper.

The first five chapters, as well as the classified appendix, answer the first question: yes—the Air Force does need OSA. Nearly 80 years of history show the Air Force and its predecessors have generally made good use of OSA in wartime. During World War II, thousands of OSA-type aircraft served commanders and staffs at all levels throughout the world, providing vital, timely communications and transportation connectivity between all echelons of command. In Vietnam, the SCATBACK organization ensured reliable, secure airlift of highly classified documents and intelligence materials, as well as DV movement in a continual combat environment. Although not directly involved to any great degree during operations in Grenada or Panama, OSA still provided important concurrent airlift support in the CONUS. Finally, OSA's role during Operations Desert Shield and Desert Storm clearly showed OSA still

has a vital wartime role in providing time-critical airlift support for passengers, cargo, and classified material in an active war zone. Until we can "beam" people and material between distant points in *Star Trek*–like fashion, the Air Force will need OSA to meet the special airlift needs of commanders and their staffs during wartime.

Given that OSA is needed during wartime, the other two questions still remain. How should the Air Force organize, train, and equip its OSA forces, and who should employ Air Force OSA? The earlier chapters, as well as the classified appendix, set the stage by providing the necessary background to help answer these questions. This chapter fills in the blanks and completes the answers, offering specific recommendations based on the previous chapters as well as some additional information.

Acknowledging that the Air Force "is assigned a variety of primary and collateral functions and responsibilities," Air Force Manual (AFM) 1-1, *Basic Aerospace Doctrine of the United States Air Force*, says "the Air Force must organize, train, and equip its aerospace forces so it can carry out these functions and responsibilities."[1] However, the world is not a static place where old ideas and procedures will necessarily hold true in the future. Just because everything worked alright yesterday does not ensure success tomorrow. Indeed, AFM 1-1 adds, "attaining the full potential of aerospace power requires a continuous search for better ways to organize, train, and equip the Air Force."[2] Therefore, as far as this paper is concerned, how should OSA be organized, trained, and equipped today in peacetime to meet its wartime mission tomorrow? To answer this question first requires that OSA's wartime roles and missions be specifically defined.

Roles and Missions

The first official Air Force definition of the OSA mission came in Air Force Regulation (AFR) 60-23, *Operational Support Aircraft Management,* issued on 21 October 1977. AFR 60-23 defined the OSA mission as: "Air Force–directed mission(s) flown during peacetime, contingencies, and wartime. These missions include the priority movement of personnel and cargo with time, place, or mission-sensitive requirements."[3] This definition has remained virtually unchanged over the past 16 years.

Unfortunately, the description is rather vague and leaves a great deal of room for interpretation. What exactly is priority movement? How sensitive must the various requirements be to necessitate flying an OSA support mission? Can any specific missions be identified to more clearly delineate OSA's wartime roles? Is there a better definition of OSA's mission? In 1993 the Joint Chiefs of Staff (JCS) Joint Staff attempted to provide answers to these questions.

The 1993 Joint Chiefs of Staff Mission Definition Attempt

On 10 February 1993, the new president of the United States, Bill Clinton, issued a memorandum to the heads of executive departments and agencies of

the federal government concerning the "restricted use of government aircraft."[4] The memo directed all agencies to report to the Office of Management and Budget (OMB) "on their continuing need for aircraft configured for passenger use within their inventories."[5] This presidential directive set the wheels in motion for the DOD, the Joint Staff, and the Air Force to take a hard look at OSA and its mission.

On 25 February 1993, the Office of the Secretary of Defense (OSD) issued a memorandum to the director of the Joint Staff concerning the wartime requirements for OSA aircraft.[6] Emphasizing DOD Directive 4500.43 that says "OSA must be sized for wartime readiness requirements, [the memo asked for JCS] help in defining the OSA mission [to differentiate between purely OSA missions and] common-user airlift aircraft operated by the US Transportation Command (USTRANSCOM)."[7] In addition to specific numbers of OSA aircraft needed by each service and in each theater, OSD wanted the scenarios and methodologies used to translate work load into aircraft.[8]

The First Joint Staff Mission Definition. As a going-in position, the Forces Division, under the Joint Staff/J-8 (Directorate of Force Structure, Resources, and Assessment), proposed an initial definition of the overall OSA mission as:

> Service-directed missions flown during wartime, contingencies, and peacetime. These missions include priority movement of personnel and cargo with time, place, or mission-sensitive requirements. During peacetime, these aircraft shall be used to provide essential training for operational personnel, to provide cost-effective seasoning of pilots, and for logistics needs to ensure military effectiveness in support of national defense policies.[9]

Although this definition was an adequate starting point, it is as vague and ambiguous as the Air Force's OSA definition found in AFR 60-23. The Joint Staff proposal also concentrated on the peacetime uses, yet excluded the primary daily mission—DV transport—no doubt due to perceived political sensitivity of such an admission. In addition, the proposed definition begged the question as to whether other airlift aircraft could also perform the OSA mission, perhaps more efficiently.

The Joint Staff Queries the Unified Commands. To answer the OSD memorandum, the Joint Staff/J-8 queried the unified commands on 11 March 1993 to provide information along three lines.[10] First, the number, type, and sortie rate of OSA/passenger aircraft supported Operations Desert Shield/Desert Storm, both in the area of responsibility (AOR) and in the CONUS. Second, the Joint Staff wanted any existing studies on wartime requirements for OSA passenger aircraft. Third, if no requirements studies were available, each CINC was to provide an "operational assessment of that continuing [OSA passenger] requirement" in the respective theater without undertaking any new studies.[11]

Each service and unified command replied to the Joint Staff message by the end of March 1993. The services provided fairly detailed information on OSA Persian Gulf War support although they all claimed the figures were not totally complete for various reasons. United States European Command

(USEUCOM) also provided some sketchy information including the owning component command, numbers, and types of aircraft involved, but did not offer flying hour or sortie information.[12] Meanwhile, most of the unified commands offered some general OSA mission scenarios. However, USEUCOM and US Pacific Command (USPACOM) went much further than the other unified commands in their OSA mission descriptions.

USEUCOM cited specific missions flown by the component command OSA aircraft (such as US Air Forces in Europe—USAFE), both during the Persian Gulf war and in support of normal peacetime USEUCOM requirements. According to USEUCOM, USAFE OSA missions "support critical communications, including the movement of the air tasking orders [ATO] to all locations and critical intelligence traffic, key commanders and assessment teams, medical missions, spare parts, and other personnel."[13] The USEUCOM message also mentioned USAFE OSA support to continuing high priority, JCS-directed courier missions in the theater. In addition, the three USEUCOM-based C-21As (Air Force-owned) and three C-12s (Army-owned) routinely fly critical film and classified material delivery missions, move key personnel of joint task forces, and insert teams to initiate noncombatant evacuation operations and other special operations.[14]

In its response to the Joint Staff, USPACOM reiterated the continuing Pacific Air Forces (PACAF) need for OSA to support Operations Plan (OPLAN) 5027-90 and cited the 1 November 1991 PACAF study that delineated the requirement for 86 OSA aircraft (53 C-12Fs and 33 C-21As) to support contingency needs in the Pacific.[15] However, PACAF personnel admitted the 86 plane requirement was based on conservative load factors and repositioning rates, but this number still only fell to 49 planes using high-load factors.[16] Even 49 planes is well above the number PACAF currently owns (six C-21As and six C-12Fs) or could reasonably expect to see deploy from the CONUS to the Pacific region during a war.

Although the high numbers are suspect, the USPACOM message also included detailed descriptions of anticipated OSA wartime missions in the theater. According to USPACOM, OSA requirements include:

> (1) Senior level military-to-military contacts which cannot be efficiently supported by commercial air or Air Mobility Command (AMC).
>
> (2) Diplomatic discussions between senior military and host nation military representatives.
>
> (3) Teams: Maintenance expertise as well as small or short notice passenger taskings, security teams, etc., includes priority requirements which cannot be satisfied by commercial air or AMC.
>
> (4) Remote destinations not regularly served by commercial air, examples include forward areas.
>
> (5) Search and rescue.
>
> (6) Lift of passengers to/from ships. OSA/helicopters and small fixed wing aircraft are essential in this role, especially in contingencies where time sensitive airlift is essential.

(7) Short airfields include fields up to 4,800 feet where passengers cannot be efficiently moved by other means.

(8) MEDEVAC. Quick response and ability to move patients from forward area via C-12 or helo could save lives.

(9) Hazmat, especially if AMC channels are required for passengers (hazardous materials [hazmat] cannot normally be carried on missions with passengers).[17]

These nine mission areas are the most specific descriptions found in any source document, including the classified studies. They provide an excellent starting point to clearly define necessary OSA wartime missions. However, another unified command also responded to the Joint Staff message with some specific OSA contingency missions.

US Central Command (USCENTCOM) briefly described OSA's operations and missions during Operations Desert Shield/Desert Storm, mentioning courier flights, critical spare parts transportation, and high-priority passenger movements.[18] More importantly, the USCENTCOM reply outlined future OSA wartime missions based on its actual wartime experiences:

OSA were [was] essential in the Gulf war and will be required in future operations. Although enhanced methods of transmission for ATO and imagery products have somewhat decreased the frequency of courier service required, OSA is still indispensable as a backup to electronic delivery. Moreover, sensitive planning documents will still require the protection of courier delivery and receipt. As the drawdown continues and assets become more scarce, expeditious delivery of MICAP [mission impaired capability quality parts] and CASREP parts will make the difference between meeting and not meeting missions. Finally, commanders need passenger configured OSA to provide rapid mobility to visit their field commanders and troops to personally assess the course of the battle. Operational Support Aircraft enhance all these missions.[19]

The Revised Joint Staff Mission Definition. The USCENTCOM OSA mission descriptions leave no doubt as to the need for OSA in future contingencies. In addition, the USCENTCOM reply adds to the USPACOM message by providing recent, real-world experience to back up OSA wartime requirements. Taking these two lists, adding ideas from the other unified commands' replies, and considering the inputs from the Army, Navy, Marine, and Air Force headquarters' action officers who stressed OSA's service-assigned orientation, the Joint Staff proposed a revised definition:

Operational support airlift (OSA) aircraft: Service assigned and directed airlift assets used to meet wartime requirements for both the services and CINCs. During contingencies/wartime, these aircraft may be assigned to supported CINCs by OPORD/SECDEF direction.

OSA aircraft do not include common user airlift assets, lift assets which are organic to combat units assigned to theater CINCs, or those dedicated primarily to executive (VIP) airlift (Code DV-3 and above). Wartime OSA missions will include priority movements of personnel and cargo which do not lend themselves to common user or surface lift due to time, place, or mission sensitivity or due to the inefficiencies involved in using larger aircraft.[20]

The revised definition improved on the first attempt in several areas. First, the newer version clearly made provisions for OSA assets to transfer to the

CINCs during contingencies or war. Such a step clearly broke with history and tradition but reflected the actual Air Force OSA experience during the Persian Gulf War and the strong trend toward completely joint operations. Second, the new definition clearly delineated OSA from other airlift assets. These other aircraft include AMC's intertheater airlift (C-141s, C-5s, etc.), theater and Air Combat Command-assigned C-130s, aircraft assigned to support the president and other DVs (Air Force One, C-20s, etc., under the 89th Airlift Wing), as well as the other services' organic combat lift (Army and Marine troop helicopters, Navy search and rescue (SAR) helicopters, Navy carrier onboard delivery (COD) aircraft, etc.). Third, the second definition explains that OSA fills the needs when other aircraft cannot meet the airlift requirements. It includes a specific mention of the inefficiencies involved in using other, larger aircraft instead of OSA planes. Fourth, the revised definition correctly concentrates on OSA's wartime missions leaving out specific peacetime uses. Since OSA must be justified on wartime uses, such additional peacetime missions as pilot seasoning are superfluous.

Unfortunately, there are still some problems with the newer definition. First, there is no mention of specific missions other than the vague idea that OSA carries passengers and cargo on a priority basis to meet wartime requirements. Just what priority basis will be used or exactly what the wartime requirements are is left to the readers', planners', or operators' interpretation.

A New Mission Definition

Still, the revised Joint Staff OSA mission definition offers a fairly good basis for clearly defining specific OSA missions and tasks as well as the overall OSA role in wartime as well as peacetime. Combining the Joint Staff's definitions, the USCENTCOM and USPACOM mission lists, ideas from numerous personnel associated with OSA now and in the past, and borrowing from nearly 80 years of OSA history and experience, a comprehensive list of specific OSA wartime missions can now be specified. Operational support airlift wartime missions include:

1. **Intratheater Transportation of Commanders and Their Staffs.** OSA provides short-notice, rapid-response airlift to support the time-critical travel needs of the senior military commanders and staff personnel so they can visit their field commanders and troops and personally assess the course of battle. OSA also provides a means for the field commanders and their staffs to travel to higher headquarters to meet planning and operations needs. In wartime, regularly scheduled intratheater military or commercial airlift either cannot normally respond to short-notice requirements or wastes large aircraft on small group movements.

2. **Intratheater Transportation of Other Essential Personnel including Small Teams**. OSA provides efficient, reliable transportation of small numbers of key personnel when regular intratheater airlift cannot meet time constraints and/or the number of personnel is too small to make efficient use of larger aircraft, thereby freeing up those scarce resources for other,

higher volume missions. Small teams include maintenance support, security, medical, aircrews, and couriers.

3. **Intratheater Patient Airlift and Medical Support**. OSA provides rapid response MEDEVAC capability from forward areas to rear area medical facilities or between rear area facilities. OSA is perfect for small patient loads where using larger MEDEVAC aircraft would be a waste of scarce resources. Up to two litter—or six ambulatory—patients (with medical attendants) can be transported, with much greater speed and far longer range than MEDEVAC helicopters. OSA also moves medical personnel teams and such critical support items as blood and small items of equipment. In addition, OSA MEDEVAC can serve austere, short airfields where C-9A aircraft cannot operate.

4. **Intratheater Logistics Transportation**. OSA provides quick response airlift of critical spare parts and other mission essential logistics needs. OSA is especially appropriate when regular intratheater airlift does not meet time constraints, the parts or equipment are small enough to fit on an OSA aircraft but would be a waste of limited resources to use a larger airlift plane, hazardous materials preclude transportation on other passenger missions, or no other airlift aircraft are available.

5. **Intratheater Transportation of Courier, Intelligence, and Other Classified Material**. OSA provides rapid delivery of essential materials between command headquarters and field units. Such items as air tasking orders and other classified mission orders, video and still photographic imagery, general intelligence materials, and even key enemy prisoners of war (POW) can all be expeditiously moved on OSA aircraft with safety, security, and speed.

6. **Intratheater Search and Rescue**. OSA augments normal SAR assets by providing additional sets of eyes and ears during SAR operations. In addition, OSA transports search and/or command teams into bases or even austere, short fields near the SAR area. With its rapid reaction capability, OSA pilots can also act as the on-scene commander until appropriate SAR forces arrive.[21] OSA aircraft are regularly used in the SAR role by allies.[22]

The six areas listed above clearly and specifically define OSA's wartime missions. Although all six missions could possibly be performed by a combination of other airlift aircraft, no other single mission-type plane can accomplish the six required missions as quickly, efficiently, economically, and reliably as OSA. In addition, using such other intratheater airlift planes as the C-130 ties up those already scarce resources on missions where the passenger or cargo loads are so small as to not make efficient use of the larger plane's load hauling capabilities. OSA also fills the gap between regularly scheduled intratheater airlift missions to transport small loads on short-notice, high-priority missions where rapid response and high speed often mean the difference between mission success and failure.

A New Role Definition

Putting all the required missions together in a concise statement of purpose and necessity reveals OSA's overarching wartime roles. Operational support

airlift (OSA) provides short-notice, rapid intratheater airlift of high-priority passengers and cargo where time and/or location constraints, mission sensitivity, security, load volume, or availability preclude the use of other lift assets or airlift aircraft. OSA is the only means to meet the theater or supported commanders' transportation requirements as set forth in the six OSA mission areas with the necessary speed, security, safety, efficiency, economy, and reliability to ensure mission success.

This definition is simple, straightforward, and all-inclusive. It shows what OSA does, why OSA does it, and explains why OSA is uniquely qualified and necessary to carry out certain required missions. Although written with Air Force OSA in mind, the definition can cover OSA assets assigned to all services since the OSA missions can be applied to each service's OSA forces as well. Some may argue that the definition fails to delineate who should own, operate, command, and control OSA. This subject is covered later in this chapter but for now it really makes no difference because the OSA assets can come from one or all services. In addition, the supported commander can be in charge of a single service operation or part of a unified command or joint task force action.

Wartime Versus Peacetime Roles and Missions

The missions and roles of OSA are stated in terms of wartime requirements and support. Separate peacetime missions and roles are not included, mostly because the DOD and Congress say OSA is to be based on wartime requirements, not peacetime needs. However, the question of wartime versus peacetime roles and missions is important because how OSA trains in peacetime will largely determine how it performs in wartime. Therefore, defining OSA's peacetime missions and roles is important.

The six basic missions OSA will perform in wartime are actually the same ones it can and should perform in peacetime. Indeed, today's OSA does accomplish all six missions in its routine flying activities, although MEDEVAC and SAR support are rarely tasked or performed. This limitation is partly due to the availability of other, better suited assets and partly due to the purposeful decision to place nearly all OSA flying time into the DV support mission. In addition, logistics support, especially cargo hauling, is not normally practiced since it is unusual in peacetime for time constraints to preclude transportation by other airlift or even surface means. Courier and intelligence material transport also fall into the underused category during times of peace. However, all four mission areas could and should be performed much more during peacetime to prepare for similar wartime missions.

Removing four of the six OSA wartime mission areas from common peacetime accomplishment leaves the two missions OSA has traditionally performed—transportation of commanders and their staffs, and movement of other key personnel and small teams. In the CONUS, the high number of DVs and the limited number of aircraft and flying time has led Air Force OSA to almost exclusively become a travel means for only the highest ranking gen-

eral officers (lieutenant general and above) and very senior Air Force and DOD civilian leaders. Admittedly, these personnel meet the requirements of the DOD-directed OSA priority system as well as the first OSA mission area. However, limited flying time and lack of proper commitment to the other five mission areas have resulted in a failure to adequately train in the other missions. This subject is covered later in this chapter under training.

Meanwhile, in the overseas theaters, OSA has concentrated less on the DV movement business and more on moving essential personnel when and where commercial or other military airlift cannot adequately provide the needed transportation. Korea provides an excellent example. There, the C-12Fs stationed at Osan AB routinely move passengers of all ranks (and sometimes all services) to locations throughout the country when such movements are time-critical, mission-sensitive (couriers, etc.), or, as is often the case, the regularly scheduled intratheater airlift does not meet mission requirements and commercial airlift is cost-prohibitive or nonexistent. For the same reasons, Osan's C-12Fs fly more logistics support and courier missions than their CONUS OSA counterparts. In addition, PACAF-based OSA probably flies MEDEVAC and SAR missions more often than the CONUS OSA units.[23]

However, passenger movement is still, by far, the prime mission for peacetime OSA, overseas as well as in the CONUS. One reason is that the other five mission areas are not often requested or tasked in peacetime. Meanwhile, wartime experience has shown passenger movement to be the primary mission for the majority of OSA flights. Still, all six mission areas are important and should be done to some degree on a regular basis in peacetime to ensure proficiency and mission success in wartime.

One last issue concerning the roles and missions definitions—who should fly OSA aircraft—remains unanswered. Historically, OSA was flown primarily by staff pilots to maintain their flying proficiency. When the Air Force ended proficiency flying, pilot seasoning became the justification and remains so today. Thus, the vast majority of current OSA pilots are recent pilot training graduates supposedly building flying time and experience in relatively simple, low-cost aircraft. Whether pilot seasoning was ever a realistic justification for OSA is debatable, even at the relatively high flying-hour levels of the mid-1980s. In the current, much smaller flying program, the new undergraduate pilot training (UPT) graduates may not achieve the necessary hours and experience that proponents claimed was required in a viable pilot seasoning program. However, if the Air Force or any owning MAJCOM cuts OSA flying hours below current levels, the young pilots will certainly not accumulate the necessary hours.[24] Therefore, the Air Force should no longer justify peacetime OSA on the basis of pilot seasoning. Such a justification was questionable before and is indefensible now. Thus, such a role is not appropriate for inclusion into the OSA definition.

Meanwhile, whether such a young and inexperienced pilot force can perform the OSA mission under actual combat conditions is open to question, despite the successful operations during the Persian Gulf War. As discussed in chapter 5, OSA forces were lucky in the desert and did not face much of an

air or ground threat. Yet, today's training and equipment still barely enable OSA aircrews to operate in a low-threat environment. Therefore, it is doubtful that OSA could successfully operate in a medium-threat situation, especially one with chemical weapons.

However, to help ensure mission success under expected wartime conditions, the Air Force should designate OSA as a major airlift weapons system and man OSA accordingly with a proper mix of experienced and new pilots. No more than 50 percent of OSA pilots should be first-assignment pilots. The remainder should mostly be experienced, second- or third-assignment pilots mainly drawn from the airlift force. However, OSA should also be supplemented with a few command and control (C^2) (airborne command, control, and communications [ABCCC]/airborne warning and control system [AWACS]) and fighter pilots to round out the force and expose all OSA pilots to how the rest of the Air Force operates, thus ensuring better wartime coordination, cooperation, and survivability. Finally, OSA unit commanders and senior pilot supervisors should be experienced in OSA operations, preferably having flown OSA in a previous assignment.

Even with a more experienced pilot force, OSA still has serious limitations. To overcome these critical deficiencies, the Air Force must revert to AFM 1-1 and overhaul the way it organizes, trains, and equips its OSA forces to carry out the assigned wartime roles and missions.

Organization, Training, and Equipment

For 80 years OSA has been organized, trained, and equipped to carry out its peacetime DV and staff support airlift missions, generally with little regard to wartime needs. When contingencies occurred or the nation went to war, OSA forces found they often needed to be restructured to adequately support their users, retrained to carry out their missions under the unique circumstances of the given operational environment, and given better equipment to successfully operate under the particular wartime conditions. These problems were especially evident during Persian Gulf operations in 1990 and 1991.

Today the Air Force is reemphasizing how it must concentrate on organizing, training, and equipping a much smaller force to operate and win in regional contingencies throughout the world. Given past experience and the roles and missions definitions proposed earlier in this chapter, OSA can and will be a necessary part of Air Force and unified command operations during future contingencies. However, today's OSA forces are not properly organized, adequately trained, or equipped to fulfill their wartime roles and successfully perform their wartime missions. Significant changes are necessary to overcome the current deficiencies and make OSA ready for war.

Organization

Chapters 3 and 4 detailed OSA's organizational changes over the past 20 years. In short, the Air Force consolidated CONUS OSA forces under the Mili-

tary Airlift Command in 1974, more or less as an addendum to the general airlift consolidation during the same period. Overseas, OSA assets remained under the theater air component commands (USAFE and PACAF) for a while but eventually transferred to MAC by 1985. In June 1992, divestiture became the order of the day so overseas OSA resources transferred back to the theater air component commands.[25] CONUS divestiture followed in April 1993 when the Air Force reassigned most stateside OSA forces from Air Mobility Command (MAC's successor) to the host base MAJCOMs.[26] Meanwhile, before the end of 1993 most OSA C-12Fs left the operational support airlift mission area, switching roles to become part of the companion pilot training (CPT) program.[27]

Today, seven MAJCOMs own OSA forces; all with C-21As except the six C-12Fs in PACAF. In the CONUS, AMC has OSA units at Andrews AFB and Scott AFB. Meanwhile, Air Combat Command (ACC) owns the OSA flights at Langley AFB and Offutt AFB. Air Force Materiel Command (AFMC) commands the OSA unit at Wright-Patterson AFB while Air Force Space Command (AFSPACECOM) is now in the flying business with its OSA flight at Peterson AFB. Finally, Air Education and Training Command (AETC) owns the OSA units at Randolph AFB and Maxwell AFB. Overseas, PACAF has OSA forces at Elmendorf AFB, Yokota AB, and Osan AB. USAFE maintains a large OSA squadron at Ramstein AB and also commands the small OSA flight supporting USEUCOM at Stuttgart, Germany. Finally, ACC through SOUTHAF owns the single C-21 in Panama supporting US Southern Command (SOUTHCOM).[28]

The reasons behind OSA divestiture were tied to the concurrent C-130 divestiture to the theater air component commands and to Air Combat Command. Gen Ronald R. Fogleman, AMC commander, felt that AMC should give up its theater airlift forces and concentrate instead on its intertheater "Global Reach" mission. Therefore, he pushed to transfer the C-130 intratheater airlift forces to the theater commands. As for the CONUS C-130 forces, General Fogleman argued that they should belong to the command that would support the preponderance of deploying CONUS Air Force units—ACC.[29] While one can argue both sides of the issue, there is a certain logic to one command or organization supplying the needs of the overseas commands during contingencies. With ACC becoming the air component for the restructured US Atlantic Command (renamed USACOM), sometimes referred to as the "Americas Command," ACC was the logical choice to own the CONUS C-130s.

Following the same logic, the CONUS OSA forces, at least those likely to deploy overseas during wartime, should also come under a single command: Air Combat Command. However, part of the 1993 CONUS OSA divestiture plan called for OSA units to remain at their predivestiture bases and simply transfer from AMC to the base's owning MAJCOM under the one base—one boss concept.[30] Yet, the plan still tasked AMC's tanker airlift control center (TACC) to exercise centralized mission control and tasking responsibility for over 80 percent of the USAF-allotted C-21A flying hours to support validated OSA missions.[31] The remaining flying time was supposed to be available for the individual OSA units to complete necessary local training under the auspices of the owning MAJCOM.[32]

Meanwhile, under the divestiture's memorandum of understanding (MOU) between the affected CONUS MAJCOMs, AMC also retained the responsibility to exercise tasking and scheduling authority for both initial and extended contingency deployment.[33] According to the MOU, the AMC TACC would respond to contingency needs by selecting an OSA unit based upon an appropriate mobility-designed operational capability (DOC) statement as well as an historical record of mobility taskings to ensure an equitable rotation and distribution of contingency taskings.[34] However, as is explained in more detail in the classified appendix to this work, the current DOC statements (and OPLANs) are either out of date, unrealistic, or do not reflect the OSA units' transfer from AMC to the various MAJCOMs. In addition, how one MAJCOM sees equitable rotation of tasked units may not be how the other MAJCOMs view the situation, possibly leading to one or more MAJCOMs being unwilling to part with their OSA forces during a contingency.

The current problem boils down to one where five CONUS MAJCOMs now command OSA forces, but more than 80 percent of the operational control rests with just one MAJCOM (AMC) and even that MAJCOM is not responsible for providing the preponderance of Air Force assets to overseas theater commands during wartime. Thus, serious doctrinal as well as operational conflicts exists between wartime support and peacetime organization.

Organizing to Best Meet Wartime Support Requirements. From the preceding discussion, it seems that today's Air Force philosophy of one base—one boss conflicts with the doctrinal concepts unified command and control as well as that of one command providing CONUS Air Force assets to the overseas theater commanders during a contingency. The question is, which doctrinal concepts should take precedence? From a warfighting standpoint the answer is simple: since wartime support is OSA's primary role, a single command should exercise full command and control over OSA forces in peacetime to best train and equip those forces for wartime deployment and tasking. Therefore, the one base—one boss philosophy should not apply to OSA forces, unless all CONUS OSA forces could be assigned to bases belonging to that command. In that case, both concepts could be satisfied. However, as will be described later in this chapter, such a plan would significantly reduce peacetime efficiencies. Therefore, perhaps a compromise variation of doctrinal ideas best suits OSA's unique situation.

To develop the best organizational alignment first requires that wartime requirements be carefully delineated and understood. As mentioned in other chapters of this paper, there have been numerous attempts over the years to determine the MAJCOMs' wartime OSA requirements. Unfortunately, all the efforts failed to adequately clarify and specifically document a rational and realistically supportable number of OSA aircraft, sorties, and missions required to meet wartime needs. The Air Staff (probably with its Studies and Analysis Division) should now undertake a new, all-inclusive and in-depth study of wartime OSA requirements. Such a study should solicit inputs from all MAJCOMs and unified commands requesting specific numbers of aircraft and sorties required under the various contingency OPLANs, as well as rational and realistic

support documentation. However, lacking such a study at this time, some general conclusions about the MAJCOMs' wartime requirements can still be made.

First of all, two of the new owning MAJCOMs, AETC and AFMC, have no apparent wartime requirement for OSA support, yet they own 17 C-21As between them. ACC does have some legitimate wartime requirements for its unit at Offutt AFB but little or no need for all the C-21As at Langley AFB. AFSPACECOM also has some wartime requirements in the CONUS, but probably not enough to warrant the six C-21As it now has. It is also questionable how many CONUS wartime requirements AMC has for its unit at Andrews AFB, much less its squadron of eight C-21As at Scott AFB. At the same time, no one has yet determined which MAJCOMs' OSA forces should support which wartime OPLANs with which specific units.

The proposed Air Staff OSA study should require that the MAJCOMs prove their need for OSA forces to provide specific wartime support in the CONUS. In addition, the study must validate and articulate the theater air component commands' wartime OSA requirements. These wartime needs must directly relate to and support the various regional wartime OPLANs. Unfortunately, divestiture has resulted in the splintering of OSA proponency and wartime support planning. These deficiencies must be corrected as soon as possible and the Air Staff should take the lead. Once OSA's realistic wartime support requirements are determined, a specific and logical peacetime organization and basing scheme can be developed. However, even without the specifics, some general conclusions and proposals can be made.

First, the best way to organize OSA in peacetime is to align itself in such a way so as to provide maximum support during wartime. Using the same philosophy that a single MAJCOM should provide Air Force assets to the theater commander during contingencies, a single MAJCOM could also provide OSA forces to meet the CONUS MAJCOMs' requirements during contingencies. Before divestiture, AMC fulfilled this role by exercising full command and control over all CONUS OSA assets. Now, however, AMC is tasked to provide operational control of OSA forces without actually commanding those assets. This split goes against the time-honored theory of unified command and control that supposedly underlies the one base—one boss concept. Even with the current system, the CONUS host base wing commander commands but has little operational control over the assigned OSA forces. Thus, despite the rhetoric, the one base—one boss philosophy is not being followed today. Perhaps there is a better way to organize OSA forces.

There are several options to restructure CONUS OSA. First, OSA forces could be transferred back to AMC. This plan reunifies command and operational control under one MAJCOM and allows that MAJCOM to provide all OSA forces to the theater air components during contingencies. However, such a transfer leaves OSA assets at six MAJCOM-owned bases other than AMC, thus violating the one base—one boss concept but, as mentioned earlier, that philosophy is not being followed in the present setup anyway. The other problem with AMC ownership is that ACC, not AMC, is currently tasked to

provide most Air Force assets to the theater commanders during contingencies. Therefore, the second option is for ACC to take over all CONUS OSA. This plan still allows for unified command and control and also places all deploying OSA assets under the MAJCOM responsible for providing the assets to overseas commanders during wartime. The concept also follows the same logic as the CONUS C-130 transfer from AMC to ACC. However, six of the eight current CONUS C-21A units would still be located at bases owned by MAJCOMs other than ACC. But again, one base—one boss is not truly being applied to OSA now so it should not be a showstopper in the future. The other problem for this plan is the pilot seasoning program, already on the ropes due to a lack of adequate flying time described earlier. With four non-airlift MAJCOMs now commanding OSA forces, it is hard enough now for the Air Force to justify OSA as a way to season young pilots for eventual entry into larger airlift aircraft. Placing all OSA forces under the MAJCOM dominated by fighters and bombers further severs the already tenuous link between OSA and airlift pilot seasoning. At least the AMC option maintains that historically emphasized, if questionable, link.

There is also a third option: a dedicated OSA command or organization separate from any MAJCOM. In 1990 the US Army released its "Operational Support Airlift (OSA) Wartime Requirements Study."[35] The study addressed "the total *Army's CONUS wartime aircraft requirements* for OSA in terms of the number and types of aircraft needed, the positioning of the fleet (aircraft locations) and the type organization (manning) best suited to execute the OSA mission."[36] The final report contained four key recommendations but two were most significant. First, the study suggested that Army OSA be removed from under the various posts' commanding generals and consolidated into "hubs" serving all Army needs (the complete reverse of Air Force OSA divestiture). The second recommendation tied into the first by centralizing Army OSA command and control under a single organization.[37] The Army chief of staff adopted these two recommendations and, on 1 October 1992, the Army implemented the Operational Support Airlift Command (OSAC) at Fort Belvoir, Virginia. OSAC is not part of any Army field command but instead comes directly under the vice chief of staff of the Army. OSAC commands and operationally controls all active duty and reserve Army OSA assets and is also responsible for providing contingency support should the need arise.[38]

Thus, the third option for Air Force OSA is to adopt an independent OSAC. This option has several advantages. First, command and control would be unified under a single organization. Second, an Air Force OSAC would be less susceptible to the political infighting between the MAJCOMs. If OSAC was placed directly under the vice chief of staff of the Air Force (VCSAF), it could tie into the current setup for the Air Force special air missions (SAM) that schedules and controls such DV missions as Air Force One and the other similar aircraft based at Andrews AFB. However, one drawback is that the VCSAF office is probably not presently setup to support the warfighting commands. In addition, the political climate in the Washington, D.C. area might draw too much attention to Air Force OSA. That is why OSA command trans-

ferred from Andrews AFB to Scott AFB back in 1978. A second variation would be to place the OSAC under another organization at the Air Staff but that would possibly require a significant reorganization and could lead to even more political turmoil between the perceived winners and losers.

A third organizational variation for an Air Force OSAC would be to place it directly under USTRANSCOM. A form of this concept was discussed at the May 1993 meetings held at USTRANSCOM headquarters as part of the bigger effort to coordinate all DOD OSA under a single organization. Under one proposal, all the services' OSA forces would be centrally scheduled and operationally controlled from a joint organization under USTRANSCOM. The Navy and Marines fought this idea, arguing that OSA was service organic airlift and not subject to command and control by the unified commands.[39] However, political reality argues against the Navy/Marine position. First of all, Desert Shield/Desert Storm experience showed Air Force OSA was indeed placed under the command and control of the unified commander. Although the other services' OSA assets remained under their individual services in the Persian Gulf, joint doctrine does not (and should not) allow for units in a combat theater to remain outside the command and control of the theater's unified commander. The reality is that *all* forces should come under the unified commander and therefore all air forces should be commanded and controlled by the joint forces air component commander (JFACC). Such being the case, Air Force OSA could be placed under a unified command in peacetime, so long as that command is responsible for providing forces to support the theater commands during wartime. Although perhaps USTRANSCOM does not fit that description as well as USACOM, USTRANSCOM is in the day-to-day airlift mobility business during peacetime and wartime. Since OSA is airlift mobility, it fits in best with the USTRANSCOM mission.

Therefore, the best organizational option is for Air Force OSA assets to be consolidated into a single organization, Air Force OSA Command (AFOSAC), under the direct operational control of the J-3 (Operations) at USTRANSCOM. Combined with similar OSACs from the other services, the resulting OSA Division (OSAD) at USTRANSCOM would control (schedule) all DOD OSA assets. Each service would still be responsible for organizing (manning and basing), training, and equipping its individual OSA assets. However, the OSAD and USTRANSCOM become the unified voices for ensuring that the service-contributed OSA forces meet the supported commanders' wartime requirements.

Recognizing that, for doctrinal or political reasons, USTRANSCOM might not be granted command authority over OSA forces in peacetime, the AFOSAC could be an AMC organization since AMC is the Air Force component of USTRANSCOM. However, day-to-day scheduling and full operational control could and should belong to the OSAD under USTRANSCOM/J-3. AMC would simply fulfill its normal MAJCOM functions by organizing, training, and equipping the OSA forces and supplying them to USTRANSCOM which, as a unified command, employs the forces in the CONUS during peacetime. In the event of war, USTRANSCOM also employs those OSA forces operating in the CONUS supporting the applicable OPLANs. For those additional OSA

assets needed overseas during a contingency, USTRANSCOM becomes the supporting command, deploying the necessary OSA forces to the supported theater commander through the appropriate air component command.

Although such a plan would be very controversial, politically and doctrinally, there are many advantages for the Air Force. First, the plan rightly reunifies command and control of all Air Force OSA assets under a single organization. The current split framework (created by divestiture) is removed allowing users and operators alike to most effectively work together. Another advantage is that, from a political standpoint, Congress and the DOD have but one place to look when they question OSA requirements, funding, and daily operations. Staffers, action officers, auditors, and investigators can efficiently and effectively deal with a single, efficiently streamlined organization in resolving all issues. A third advantage of this proposal is that individual bases and commanders would not command or control OSA forces and therefore not be tempted to abuse such assets. Past violations are well documented in numerous audits and investigations. Meanwhile, the current Air Force OSA system is ripe for abuse. MAJCOM, wing, and group commanders can order their OSA units to use training hours to fly them or others they may choose on airlift missions that are not local training but actual passenger airlift missions that would not receive validation through the normal OSA priority system. It is only a matter of time before investigators uncover such abuses in today's OSA system.[40] A fourth positive result of placing OSA under USTRANSCOM is that the unified command responsible for general US forces' wartime mobility deployment would take over responsibility for OSA mobility, both in the planning and the actual deployments. As mentioned earlier, OSA participation in the current OPLANs is sadly lacking, either being unrealistic or, in several cases, completely missing. USTRANSCOM planners could ensure OSA forces were carefully and successfully integrated into all wartime OPLANs. Then the USTRANSCOM operators would provide the forces necessary to support the various requirements during any contingencies. This concept would also eliminate current MAJCOM concerns over equitable sharing of OSA contingency taskings, since a unified command would exercise full operational control and its subordinate air component (AMC) would command the OSA assets. The fifth, and perhaps most important, advantage of placing all OSA under USTRANSCOM is that the unified command responsible for meeting the mobility needs of the theater commanders would have the responsibility and capability for determining overall OSA wartime requirements. In support, USTRANSCOM's OSA service components (AMC's AFOSAC, Army OSAC, etc.) would acquire the necessary assets and ensure that peacetime utilization and training adequately prepare OSA to meet its wartime as well as peacetime roles and missions.

Peacetime Organization. Having resolved that Air Force OSA should be commanded and controlled by USTRANSCOM through its OSA Division and Air Mobility Command, the next step is to determine the basing plan that best supports wartime requirements while also maximizing peacetime efficiencies and economies. The problem is relatively simple in the overseas theaters, but rather complicated in the CONUS.

Overseas, the theater air component commands have consolidated their OSA assets into something resembling a regional hub system which limits overhead costs and maximizes centralized control and scheduling. USAFE has nine C-21As at Ramstein AB, Germany, to serve most small aircraft OSA needs throughout Europe. In addition, USAFE also commands the small (three C-21As) OSA unit based at Stuttgart, Germany, but EUCOM exercises operational control over the planes (a similar arrangement to the proposal in this paper between USTRANSCOM and AMC for CONUS OSA). In PACAF, the four C-12Fs at Elmendorf AFB, Alaska, serve 11th Air Force OSA needs including remote site support. Meanwhile, the two C-12Fs at Osan AB provide dedicated support to Seventh Air Force in Korea, making efficient use of the larger capacity C-12F on the short distance missions throughout the Korean peninsula. Finally, the six C-21As at Yokota AB, Japan, serve not only Fifth Air Force, but provide OSA support to Thirteenth Air Force on Guam as well as the intratheater OSA needs for all PACAF units in the region. Since each theater command owns the bases in its respective theater, there is even unified command and control under the one base—one boss philosophy. Since each command supports its overarching unified command, it is in the best position to determine its own needs for OSA basing, flying time, and manning. So long as each command provides adequate funding and training to prepare its OSA forces to meet their wartime requirements, there should be no problem.

However, in the CONUS there is a serious problem with the current basing scheme. The Air Force did not allow any new OSA basing as part of divestiture.[41] However, three months later, the Air Force released a rebasing plan calling for unit closures and C-21A rebasing, concurrent with the transfer of most OSA C-12Fs to the CPT program. Four CONUS OSA locations closed and their aircraft dispersed to the other existing units, leaving eight C-21A units to accommodate all peacetime OSA support requirements in the United States. Planners determined that closing the four sites, three of which were small four or five plane detachments (McClellan AFB, California; Eglin AFB, Florida; and Barksdale AFB, Louisiana), was the most cost-effective way to save money because the small sites had proportionately higher fixed overhead CLS costs than the larger sites. The fourth unit, March AFB, had four C-21As and four C-12Fs, but historical usage studies showed the southern California area did not need that many planes. Transferring the four C-12Fs into the CPT program placed March's OSA C-21As into the small unit category and was therefore relatively more expensive to operate than a larger site. Planners decided to close March's OSA unit altogether despite the fact that such a move left the Air Force with no OSA forces west of Colorado. The rebasing plan (table 33) took effect on 1 October 1993.[42]

As described in chapter 4, official basing studies clearly show historical usage does not justify maintaining OSA aircraft at the eight current bases.[43] Instead, the basing plan appears politically motivated to appease the desires of the Air Force's four star generals who want OSA planes at their respective headquarters.[44]

In May 1993, Mr Alan Whisman of AMC/XPYR, the author of the basing study discussed in chapter 4, once again reviewed historical OSA data from FY 1992

Table 33

1993 OSA Rebasing Plan

Base (MAJCOM)	1 July 1993	1 October 1993
Barksdale (ACC)	5	0
March (AMC)	4	0
Eglin (AFMC)	4	0
McClellan (AFMC)	4	0
Offutt (AC)	9	6
Langley (ACC)	6	6
Randolph (AETC)	5	6
Maxwell (AETC)	4	4
Wright-Patterson (AFMC)	5	7
Peterson (AFSPACECOM)	6	6
Andrews (AMC)	8	8
Scott (AMC)	6	8
Howard (ACC)	1	1
Ramstein (USAFE)	3	9
Stuttgart (USAFE/EUCOM)	3	3
Yokota (PACAF)	2	6
Totals	75	70

Note 1: Figures do not include the four TF-coded schoolhouse aircraft scheduled to be moved from Scott AFB (AMC) to Keesler AFB (AETC) after the 1 October 1993 rebasing plan effective date.

Note 2: The five aircraft difference between the columns represents a planned net decrease in the OSA C-21A force due to budget reductions.

Source: Message, 021403Z Jul 93, Headquarters AMC/XP to SECAF/FMB et al., 2 July 1993, 2–5.

supplied by AMC/DORR (the OSA scheduling division). This time, Mr Whisman removed the previous constraints of only using existing OSA bases and limiting sites to six or more aircraft. Given 58 C-21As (the number then thought to be reasonable for the CONUS allocation), each with 470 OSA flying hours per year, Mr Whisman determined that 16 locations generated enough demand to be allocated at least one C-21A. Those sites, along with the numbers of C-21As necessary to support the historical demand, are presented in table 34.

The most striking fact seen in table 34 is that Langley AFB deserves only one C-21A based on actual usage. On the other hand, the west coast needs at least three C-21As to support the requirements of the three sites there. Florida should get two planes based on its usage as well. Another interesting fact is that basing according to table 34 would meet more than 80 percent of historical demand, well over the actual historical average of between 40 and 50 percent.[45]

Of course, it is very uneconomical to maintain single aircraft sites since the basic overhead contractor logistics support (CLS) costs for one plane are the same as for four, six, or eight planes. Considering such a problem, Mr Whisman considered basing options with a minimum of four aircraft per location. Starting with the six most optimum sites, then listing the seven, eight, nine, and 10 best

Table 34

OSA Demand Basing—Unrestricted Unit Size

Base/City	#C-21As
Wright-Patterson AFB	11
Scott AFB	8
Offutt AFB	8
Andrews AFB	7
Randolph AFB	5
Maxwell AFB	5
Peterson AFB	5
Langley AFB	1
Hanscom AFB	1
McClellan AFB	1
MacDill AFB	1
Eglin AFB	1
Norton AFB	1
Fort Leavenworth	1
Kirtland AFB	1
San Jose	1

Source: Mr Alan Whisman, AMC/XPYR, fax sent to author, 18 May 1993.

locations, Langley still ranked at the bottom of the barrel, as shown in table 35.

Interestingly, the percentage of historical demand met still averages around 80 percent, the same as using the unrestricted basing of table 34. Note that the six-, seven-, and eight-base scenarios in table 35 do not include Langley. Instead, Norton (now March) on the west coast still deserves OSA planes over the ACC headquarters base. Still, in terms of the actual rebasing

Table 35

OSA Demand Basing—Four Aircraft Minimum

	Number of Bases Used				
Base	6	7	8	9	10
Andrews	15	15	11	10	9
Wright-Patterson	12	12	11	11	10
Scott	9	8	8	7	6
Maxwell	6	6	6	5	5
Offutt	12	8	8	8	7
Norton	4	4	4	4	4
Randolph	–	5	5	4	5
Peterson	–	–	5	5	4
Langley	–	–	–	4	4
Fort Leavenworth	–	–	–	–	4
Percent Historical Demand Met	79.5	80.0	80.1	80.1	79.9

Source: Mr Alan Whisman, AMC/XPYR, fax sent to author, 18 May 1993.

plan that took effect in October 1993, budget realities steered planners to demand a six-aircraft minimum per base. Fortunately, Mr Whisman also ran the figures for such a six-plane minimum per site as shown in table 36.

Table 36

OSA Demand Basing—Six Aircraft Minimum

	Number of Bases Used				
Base	6	7	8	9	10
Andrews	15	15	10	7	6
Wright-Patterson	12	11	10	8	6
Scott	8	6	6	6	6
Maxwell	6	6	6	6	6
Offutt	10	8	8	7	6
Peterson	7	–	6	6	6
Randolph	–	6	6	6	6
Norton	–	6	6	6	5
Langley	–	–	–	6	5
Barksdale	–	–	–	–	6
Percent Historical Demand Met	79.3	79.7	79.7	79.4	79.3

Note: The 58 total aircraft constraint limits Norton and Langley to the 10-base option.

Source: Mr Alan Whisman, AMC/XPYR, fax sent to author, 18 May 1993.

Table 36 shows that even under a six-aircraft minimum, historical demand is still met nearly 80 percent of the time, less than one percent less than under either the unrestricted or four-plane minimum unit size. It also shows that Peterson ranks above Randolph and Norton for the six-base option. However, as in the four-plane minimum, Langley still ranks below eight other bases and actually comes out below Barksdale in the 10-base option.

Clearly, all the data shows Langley does not deserve to have a C-21A unit under an eight-base option. The nearby OSA unit at Andrews can adequately support Langley's OSA needs. However, leaving Langley out of the OSA picture would deny dedicated support to the ACC commander, the only four-star Air Force general officer to lack such coverage. Therefore, planners prudently substituted Langley for the west coast site.

More disturbing however, is that wartime requirements were apparently not considered in making the CONUS OSA rebasing decisions. The locations selected were strictly driven by political and budgetary considerations, not wartime support needs. However, if wartime requirements alone drove peacetime basing, most OSA would be based overseas with some CONUS OSA forces placed at the bases likely to need quick reaction OSA assets. Therefore, a compromise should be reached that considers wartime support needs while efficiently and economically supporting peacetime Air Force needs. Given that only 51 C-21As are left in the CONUS OSA inventory, using the historically accurate, statistical basing studies from AMC, and adopting the proposal that

USTRANSCOM and AMC should command and control all Air Force OSA assets, table 37 offers a new basing plan.

Table 37

Proposed OSA Basing Plan

Base	Current Number C-21As	Proposed Number C-21As
Andrews	8	15
Scott	8	8
Wright-Patterson	7	10
Peterson	6	6
Offutt	6	6
Randolph	6	0
Maxwell	4	0
Langley	5	0
Travis	0	6

The proposed changes in table 37 have a number of advantages over the current basing scheme. First, the new concept reduces the number of OSA locations from eight down to six, further reducing CLS overhead costs, thereby saving money. Second, the new basing provides west coast coverage, something missing from the current setup and fulfills the historically documented need for OSA service on the west coast. Third, only three of the six bases do not currently belong to AMC thus limiting the violation of the one base—one boss philosophy. Of those three non-AMC bases, two (Peterson and Offutt) have legitimate and immediate wartime OPLAN OSA requirements, so placing OSA forces at those bases is appropriate. OSA assets could be based at the nearest AMC base but the higher costs associated with empty positioning and depositioning legs outweighs the AMC-ownership priority. Wright-Patterson has little, if any, direct or immediate wartime OSA needs. However, the base is historically the second highest OSA user in peacetime. Again, the economics argue against putting the necessary OSA assets at the nearest AMC base and supporting Wright-Patterson's OSA requirements from another base.

Admittedly, direct peacetime support for three current bases is removed. However, those bases can have their needs met by other bases. Peterson and Offutt are near enough to Randolph to support that base. Besides, Randolph also has no immediate or direct wartime OSA requirements as opposed to Offutt and Peterson. The higher costs caused by empty positioning and depositioning legs is outweighed by the reduced CLS overhead expenditures associated with fewer OSA locations. So far as Maxwell is concerned, the historical data shows that a majority of Maxwell's missions do not originate there with home-station passengers. Indeed, the C-21As there usually fly out to a base, pick up the DV party and fly them to Maxwell, often for a speaking engagement at one of the Air University's schools. Then, the DV party returns home on another Maxwell mission. Such an arrangement leaves the first and fourth legs empty unless the TACC can find other passengers. Therefore, the other bases can support Maxwell's needs, probably just as effectively as the

unit currently at Maxwell. Finally, the data proves Langley does not need an OSA unit. The Andrews unit is near enough to provide ample support to Langley and has indeed done so in the past. Langley has also failed to document direct or immediate wartime needs so it fails that test.

Closing the OSA units at Langley and Randolph will remove home-station OSA support from two of the Air Force's four-star generals. However, the OSA regulation is clear that OSA support is not to be based solely on rank or position but on the particular mission's priority of need.[46] Under the new basing proposal, AETC and ACC commanders and their staffs can still receive the same OSA support they have traditionally enjoyed and deserved. At the same time, removing their dedicated, home-station OSA units sends a clear political message to Congress and the DOD that wartime readiness, not peacetime general officer support, is OSA's primary role.

A fourth advantage of the rebasing concept is wartime support. Andrews has the highest need for direct and immediate, as well as extended, contingency support and is therefore allotted the highest number of planes. As mentioned earlier, Peterson and Offutt have valid wartime needs so they also have direct, home-station OSA support, although with the smallest number of planes (six) allowed by economics. That leaves the OSA units at Scott, Wright-Patterson, and Travis. These units comprising 24 C-21As (nearly half of the CONUS total) would provide the OSA forces ready for near-immediate deployment overseas during a contingency. They would maintain the highest state of deployment readiness and regularly practice their mobility plans to ensure their preparedness to support regional OPLANs. The other three units would also be susceptible to mobilization during a crisis and could, if needed, also deploy overseas. However, their primary role would be to provide CONUS airlift support for the OPLANs. Therefore, the three units would maintain a lesser state of overseas mobilization readiness and instead concentrate on practicing rapid sortie generation to support CONUS wartime requirements requiring immediate movement.

The bottom line is that all six CONUS OSA units must be ready to support both CONUS and overseas wartime needs but would concentrate on one type of support or the other. During routine peacetime missions, all six would continue to provide OSA users with safe, reliable, and efficient airlift support under the auspices of AMC and USTRANSCOM's OSAD. During a contingency, each unit would be well-prepared to provide necessary OSA support, either after deployment overseas to work directly for the theater commanders or remaining in the CONUS, still under USTRANSCOM's OSAD. Meanwhile, OSA forces currently stationed overseas should remain under their respective theater air component commands.

Maintenance Support. Since the C-21As and C-12Fs joined the Air Force inventory in 1984, civilian contractors have provided nearly all aircraft maintenance and support under the CLS program. This maintenance program came about because the Air Force initially leased the aircraft from Gates-Learjet and Beech and wanted those companies to provide the maintenance on the company-owned planes. When the Air Force purchased the planes several years later, it seemed logical, and was probably cheaper, to keep the

CLS contractors since they were in place. The Air Force thus avoided the turbulence and training costs that might have been associated with a switch to Air Force blue-suit maintenance.

In peacetime, civilians also provide a unit with stability and corporate knowledge that Air Force personnel usually lack. So far as wartime is concerned, the contracts require the civilians to deploy with the units or stay at home-station, depending on the unit's tasking. However, as described in chapter 5, reality overcame contractual requirements at the onset of Operation Desert Shield as several civilian maintainers refused to go to war with their units. Although the company found other volunteers, the precedent was set: the Air Force should not count on civilian contractors to go to war. No matter what the contract says, a civilian can simply quit his or her job and refuse to honor the contract. Had Iraq attacked the OSA airfield at Riyadh with conventional—much less chemical—weapons, many more civilians might have decided no amount of money was worth losing their lives.

In addition, once in the AOR, some civilians became contract sticklers, refusing to do the work necessary to accomplish the mission unless it was required in the contract. In a war, operators and maintainers absolutely must work together to "hack the mission." Without this cooperative attitude, no organization or unit will accomplish its mission. OSA is no exception.

The Air Force should learn a valuable lesson from the OSA maintenance experiences during the Persian Gulf war. To prevent a similar (or worse) experience in the future, and to provide the commanders with clear control over their maintenance personnel, the Air Force should take the necessary steps to replace the current civilian CLS support with Air Force maintenance personnel. Due to the high costs involved with early contract termination, as well as the time needed to train the Air Force maintainers, the replacements should be phased in over time. Such a change will bring OSA units in line with other Air Force operational flying units where the commander of the flying unit commands maintenance personnel, at least at the aircraft generation level. This change will enable the commander to exercise the necessary command and control over his or her entire operation. Only then will OSA be truly ready to go to war.

An Organization Summary. The proposed rebasing and reorganization best meets the needs of the Air Force and the unified commanders during both peace and war. In addition, replacing civilian CLS with Air Force blue-suit maintenance provides the units with reliable, responsive maintenance for wartime deployments and operations. However, organization is only one part of AFM 1-1's admonition to continually "search for better ways to organize, train, and equip the Air Force."[47] Unfortunately, there are still serious flaws in how OSA is trained and equipped, but there are also solutions.

Training

Real-world experiences, especially those of Vietnam and the Persian Gulf Wars described in chapter 4, clearly show OSA forces are not properly trained

to perform all of their wartime missions in a combat environment. With some rare exceptions, OSA forces do not practice in peacetime the procedures necessary to ensure success in wartime. Chemical defense (CD), combat communications, airspace management, basic visual flight rules (VFR) navigation, and combat aircrew training (CAT) are all part of combat support flying, yet peacetime OSA commits little, if any, time and effort to these critical training areas. Other weapons systems receive a great deal of such training, yet peacetime OSA spends most of its time just flying DVs from base to base like a mini-airline with little regard to how it would accomplish the same mission, much less others, in a combat environment. To slightly alter an old motto, it is time for OSA "to train the way it will support the fight."

Chemical Defense. The problem with OSA and chemical defense is twofold. First and foremost is that the aircraft are not properly equipped to operate in a chemical environment. The second shortcoming is that OSA crews are not realistically trained to operate in actual chemical surroundings. As discussed in chapter 5, both problems could have had disastrous consequences in the Persian Gulf. The equipment fixes are discussed later in this chapter. Assuming those problems are overcome, realistic training must be instituted to properly prepare OSA crews to operate in a chemically contaminated atmosphere.

AMC Regulation 51-1, *C-9, C-12, C-20, C-21, C-137, and VC-25 Aircrew Training*, volume 2, released on 8 September 1992, established "procedures to train aircrew members" in the C-12 and C-21, in addition to several other passenger aircraft.[48] The regulation's only discussion of chemical defense training is found in paragraph 4.4, "Chemical Defense Task Qualification Training (CDTQT)." The paragraph states that "CDTQT reinforces awareness of and demonstrates physiological effects and limitations while wearing the aircrew chemical defense ensemble (ACDE)."[49] Further on in the paragraph under procedures, the regulation states that "the entire ACDE need not be worn," only the mask, filter pack, and gloves.[50] In addition, the safety observer pilot must be an instructor or flight examiner, occupy the opposite pilot seat, and not wear the ACDE or chemical defense ground ensemble. In other words, pilots never train with the complete ACDE they must wear in actual chemical conditions, nor do both pilots ever wear the ACDE at the same time, as they would need to do in a chemical environment.

In addition, the civilian maintenance crews are probably not ready to operate in a chemical environment. Although the CLS contract requires the civilians to be trained in the CD wear, the maintenance personnel rarely, if ever, practice performing their aircraft support work while wearing the CD ground ensemble. It is doubtful they can effectively launch, recover, or perform adequate maintenance in chemically contaminated surroundings.

In short, OSA forces are prohibited from training the way they will likely need to operate in a war zone. Safety is important but if air and ground crews do not train realistically in peacetime, they are unlikely to succeed during wartime. Besides, when the chemical munitions start falling, it is too late to find out that it is too dangerous to fly OSA aircraft with both crew members dressed in ACDEs or that it is impossible to launch the missions because

civilian maintainers cannot adequately prepare the planes. Certainly no theater commander or JFAAC wants to find out that OSA crews and aircraft cannot meet their critical wartime requirements due to chemical attack.[51]

Overcoming the chemical defense training deficiencies requires a realistic training program. For the aircrews, aircrew CD training should consist of three parts. First, as part of the pilots' initial training in the simulator, they should fly at least one hour while wearing the complete ACDE. The mission profile should include at least four takeoffs and landings, as well as two instrument approaches. Second, as part of initial flying checkout at the unit, each pilot must perform the same profile on a local training sortie with an instructor or flight examiner in the opposite seat, not wearing the ACDE. Finally, after demonstrating proficiency in the local flight phase, two pilots together perform a complete cross-country training mission (no passengers), including aircraft preflight and postflight, under the supervision of an instructor or flight examiner flying in the jump seat. At the same time, the civilian maintenance ground crew supports the mission launch and recovery while wearing the complete CD ground ensemble, ensuring they can function properly as well in a contaminated atmosphere.

This training program will cost flying time, money, and require ACDEs be maintained at the simulator site. However, after successfully completing the three phases, the pilots are fully qualified to operate in chemical surroundings. More importantly, the OSA force is then truly prepared to carry out its wartime missions in a hostile chemical environment.

Combat Communications. Communications is like chemical defense—an area where both equipment and training need improvement to ensure successful OSA performance in a combat environment. Like chemical defense, the communications equipment issue is discussed later in this chapter. However, it is doubtful whether the Air Force will purchase secure and jam-resistant communications equipment for OSA aircraft, if only because of the cost. If the new equipment is acquired, then the need for extensive aircrew training is obvious. However, even with the current radios the aircrews can and must train to work with ground and air controllers.

On a typical mission, OSA aircrews do not use or need any special communications expertise. The pilots must communicate with air traffic control (ATC) personnel (normally civilians) on the ground and in the air to enable the plane to fly from one location to another. In addition, the aircrews may speak with military C^2 personnel, either at those bases where a local command post exists, or with the theater C^2 facility (such as the TACC for the CONUS). Without any secure radios, OSA aircrews transmit and receive information in the clear, subject to uninvited eavesdropping, unless both sender and receiver encrypt the messages using classified cryptographic tables. Civilian ATC does not normally have cryptographic or secure voice capability. However, during contingencies in overseas theaters, military controllers will normally assume the ATC mission in the AOR and expect aircrews to talk secure or encrypt their messages. In addition, theater C^2, including ground

controlled intercept (GCI), will certainly expect aircrews to communicate using secure or manually encrypted means.

The first problem concerning combat communications is that OSA crews do not regularly practice encoding and decoding their communications nor do they train to operate in a classified communications environment. At best, OSA aircrew training consists of an annual requirement to watch a videotape or slide/audiotape program that reviews authentication procedures. This training does not include any hands-on practice with the encryption book, even an unclassified "For Training Use Only" version. To overcome this deficiency, OSA ground training should include realistic practice with appropriate documents in semiannual training classes. Following ground training, aircrews should be required to accurately transmit and receive encrypted communications with a military C^2 facility, again on at least a semiannual basis. In addition, during exercises OSA aircrews must use encryption on a regular basis. Such realistic training tests both sides of the OSA system—aircrews and ground C^2 personnel—and ensures effective communication in a combat environment.

The second communications problem is the air-to-air version of the first deficiency. During contingencies, OSA crews might need to communicate with airborne command, control, and communications (ABCCC) and airborne warning and control system (AWACS) aircraft. In addition, mission scenarios could require OSA aircraft to receive friendly fighter escort to ensure safe passage through even relatively low threat areas (no more Admiral Yamamotos shot down in supposedly safe, rear echelon areas). Unfortunately, OSA forces do not train for such demanding mission scenarios, much less practice the required communications interfaces necessary to ensure a successful mission.

An overarching combat support mission training program is discussed later in this chapter. However, part of that program must involve air-to-air communications training, even if OSA crews are limited to using their current unsecure, nonjam resistant radios. OSA aircrews must learn ABCCC, AWACS, and fighter communications procedures and regularly practice with those C^2 and escort assets to ensure all parties can effectively communicate with each other.

OSA forces must receive realistic combat communications training with ground and air controllers, as well as potential escorts. Without proper communications exercises, OSA mission success is certainly left in doubt. So far, such training is virtually nonexistent. It is past time to include the necessary practice as an integral part of regular ground and flight training.

Airspace Management. This issue's limited history relative to OSA was discussed in chapter 4. In short, despite an effort begun in 1989 to train Military Airlift Command (MAC) aircrews, OSA forces received little or no training in wartime airspace management procedures. Such airspace control programs as corridor procedures or silent running operations were not taught to OSA aircrews.

Meanwhile, fighter, bomber, and tanker aircrews depend on airspace management procedures during contingencies to ensure controlled sortie and package sequencing and avoid midair collisions. In a combat environment where communications and navigation aids are often denied, either by

friendly or enemy action, airspace control is absolutely vital. Without such control, the sky becomes an arena of mass confusion with numerous aircraft transiting small areas at unknown times, altitudes, and headings. The high potential for disaster is evident.

OSA crews face the same situation on combat support missions. During Operation Desert Storm the massive intratheater airlift supporting Gen Norman Schwarzkopf's "Hail Mary" troop movement relied on corridor procedures, silent running, and deception practices. OSA did not directly participate in the move. However, if OSA support had been required, the forces could not have taken part because the aircrews were not trained in the appropriate airspace management procedures.[52] OSA forces were lucky in the desert. In the next contingency, OSA must be prepared to operate in an airspace control environment.

There are two basic steps necessary to properly train OSA aircrews in airspace management procedures. The first step is simple book education. The fighter world is indoctrinated in the necessary requirements, both at initial qualification schools and in their units. OSA forces must do the same. The procedures and programs are published in both classified and unclassified versions, often as pamphlets or aircrew guides, by the MAJCOMs or other agencies. OSA aircrew members need to learn the information as part of their initial qualification training, either at the schoolhouse or soon after arriving in their units.

The second step is to train OSA aircrews in airspace management procedures on actual flying missions. Many of the control programs can be practiced with little, if any, external support, even on actual passenger support missions. However, the best and most realistic training will occur by participating in training exercises where the management procedures are incorporated into the mission scenarios.

OSA forces must know airspace management procedures. In addition, the aircrews must be able to operate in a highly controlled, but radio denied, combat environment. Only by learning and practicing airspace management programs can OSA forces ensure mission success.

Basic Visual Flight Rules Navigation. During an OSA mission in the Persian Gulf, Gen Merrill A. McPeak, the new Air Force chief of staff, was dismayed to learn that the aircrew did not possess VFR navigation charts for their route of flight.[53] If electronic navigation aids were inoperative or denied (by friendly or enemy forces), the aircrews would have to navigate by comparing ground reference points to VFR flying charts (maps of the ground). Unfortunately, OSA aircrews were not prepared to fly in such a manner. General McPeak's OSA crew did not have a VFR chart because they had never received training on how to prepare such a chart, much less how to fly a mission using a VFR chart for navigation reference.

Despite some attempts to rectify these deficiencies, OSA crews still do not receive adequate VFR mission training. As described in chapter 4, there was an effort in the late 1980s to get OSA crews involved in the combat aircrew training program. Deferring specific suggestions for an OSA CAT program

until later in this chapter, the important point for now is that, at best MAC only halfheartedly supported the OSA CAT program. MAC even changed the program's name from CAT to tactical VFR training (TVT) to deemphasize the program's combat support orientation.[54] Even so, OSA's TVT received limited support from senior MAC and Air Force leadership. MAC did not transfer any flying hours from operational DV support mission into training to support the TVT program.[55] Therefore, unit commanders faced a choice between using their already limited training hour allotment for basic pilot proficiency, qualification, and upgrade requirements or for the TVT program. TVT did not stand a chance and, with further flying hour cuts in the early 1990s, quickly disappeared from OSA training.

However, Operation Desert Shield/Desert Storm experience and the possibilities of future regional contingencies dictate OSA crews must be prepared to navigate in a totally VFR environment. Even if the threat and employment scenarios do not require very low level (500 to 1,000 feet above ground level [AGL]) flight, OSA crews must be able to navigate by reference to VFR charts and ground points while flying at altitudes of 3,000 to 10,000 feet AGL. At these higher altitudes, VFR navigation becomes much easier than at the very low altitudes and the threat of aircraft damage due to small arms fire is greatly reduced.

Therefore, the Air Force should institute a new TVT-type program, known as VFR mission navigation training (VMiNT), as soon as possible. The program should consist of two phases, ground training and actual flying. Due to the limited resources and flight time at the formal schools, VMiNT should be an in-unit training program. One possibility would be for qualified C-130 pilots and navigators to train the initial OSA VMiNT cadre at the OSA unit (with TDY C-130 personnel). However, a better option would be for the OSA cadre to travel TDY to the C-130 units, receive the required ground training, and then fly on a typical C-130 low-level mission to get a good feel for how the entire process works, from planning through flying a mission. The fact that C-130s fly much lower than the OSA planes is not important—the planning process and crew coordination procedures are important for OSA crews to observe and learn.

The ground phase should include basic VFR chart preparation training using tactical pilotage charts (TPC).[56] General planning considerations, route selection, chart drawing, and route study techniques must be learned to a basic competence level.

After ground training is complete, OSA crews must demonstrate the capability to fly a VMiNT mission using VFR navigation procedures. For the initial cadre, the C-130 personnel could fly on the OSA aircraft in the jump seat, advising and assisting the OSA crews during the mission.[57] In turn, the newly qualified OSA VMiNT instructors would train the remainder of the OSA aircrew force in a similar manner.

The initial qualification flight missions need not be long—45 minutes to one hour is sufficient to demonstrate basic VFR competence. These initial missions should be done on dedicated unit training flights with a VMiNT (or

C-130) instructor on board. These flights should include a standard VFR departure, VMiNT route (3,000 to 10,000 feet AGL), and a standard VFR arrival (not necessarily a CAT arrival as described later in this chapter).

All aircrews must also maintain VMiNT currency—at least one mission every month. However, the VMiNT currency missions would not require an instructor so long as both pilots were VMiNT qualified and current. In addition, the VMiNT currency flight could be scheduled as part of an actual DV support mission, preferably using an empty (no passengers on board) positioning or depositioning leg. To avoid crew fatigue problems, the VMiNT mission leg must be flown during the first 12 hours of the crew day, preferably on the first sortie of the day. Using such a scheduling system, the impact on flying training time is minimized—limited to initial qualification training flights.

VFR navigation is essential for OSA aircrews to ensure they can successfully operate in a modern combat support environment. Electronic navigation capabilities might be hindered or lost so crews must know how to operate at moderately low levels using VFR procedures. In addition, most OSA pilots are young and will soon transition to larger airlift aircraft. The VMiNT program better prepares these pilots for their follow-on assignments, enabling an easier transition and giving the other weapons systems a better trained pilot.

Combat Aircrew Training. As mentioned in the previous section, TVT evolved from the CAT program. Unfortunately, the realistic and useful CAT program gave way to a less helpful TVT program which itself soon disappeared from OSA training. Actual experience in the Persian Gulf, probable employment scenarios in future contingencies, and even day-to-day missions in today's terrorist-filled world demand OSA aircrews be trained and qualified to operate in a combat threat environment. Now is the time to reinstitute the OSA CAT program to ensure OSA forces can successfully fulfill their wartime roles and missions.

Keeping in mind that CAT is intended to ready OSA forces to perform in a threat environment, the first step is to decide what should be contained in an OSA CAT program. The training development guide entitled "Airland Combat Aircrew Training Program" published by MAC in October 1987 and described in detail in chapter 4 is a good start.[58] The 375th Aeromedical Airlift Wings (AAW) CAT program developed in late 1989-early 1990 is another good source of ideas.[59] In addition, over the past seven or eight years, several OSA units developed their own CAT and TVT programs. The June 1991 issue of *The MAC Flyer* featured the innovative TVT program of Detachment 2, 1401st MAS, at Wright-Patterson AFB, outlining mission planning and the 1,000 AGL flight.[60] More recently, the 54th Airlift Flight (ALF) at Maxwell AFB began working on a new CAT program syllabus in 1993. However, the 54th ALF's program is, so far, restricted to ground training due to the limited availability of flying training time.

Nearly all of these OSA CAT programs contained two phases—ground and flying. The new OSA CAT program must also consist of ground and flight phases. The ground phase should include instruction in threat recognition and analysis, low-level mission planning (concentrating on threat detection and

avoidance), friendly forces coordination (AWACS, ABCCC, fighters, etc.), and OSA aircraft flight maneuver characteristics (turn radius, G-loading, etc.). The flying phase should require at least one day and one night training mission every calendar quarter to demonstrate continued competency in low-level navigation and threat-avoidance maneuvers, including nonstandard airfield departures and arrivals (random steep and shallow maneuvers).

Rather than outline a detailed CAT program in this work, the Air Force should bring together qualified and experienced personnel from training, logistics, plans, and operations at a working-level conference and then empower them to develop a comprehensive CAT program. They can take the best parts of other weapons systems' CAT programs, review potential OSA employment scenarios, consider the logistics aspects of an OSA CAT program, and then devise a realistic, viable, and useful CAT program.

Although the participants should determine program's specifics, they should take advantage of the OSA VMiNT program proposed earlier. VMiNT can stand alone, but it should also become an integral part of any CAT program. However, due to the more extensive mission planning and flight profile requirements, as well as the need for dedicated training time (no CAT training on actual airlift missions), CAT mission currency should require only two missions per quarter vice VMiNT's one sortie required every month. If flying more time is made available, then more CAT missions should be planned and flown.

The present mix of airlift to training hours (about 80-85 percent airlift and 15–20 percent training) contradicts the very essence of OSA purpose: wartime readiness. If planners (and the generals) are serious about OSA support as a wartime requirement and necessity, then CAT flying time must be taken out of current DV airlift support flying time. At an absolute minimum, 20 percent of OSA's present flying time program should be shifted from DV airlift support to the CAT and VMiNT programs. Part of this time should be devoted to OSA participation in RED FLAG, COPE THUNDER, and similar wartime simulation exercises. The CAT program will obviously reduce peacetime DV support, but it is a small price to pay for wartime readiness.

After all, if OSA aircrews are not properly trained in peacetime to face the threats they can expect to counter in wartime, then OSA will not be ready to perform its wartime missions. What general, staff officer, or DV would want to fly in an OSA plane in wartime, knowing the crew was not adequately trained for, or prepared to operate in, a combat environment? Yet, that is the recent history and, unfortunately, even the current situation. A strong, realistic CAT program can and will overcome this glaring deficiency.

In addition, a viable CAT program should appease congressional and DOD critics who often argue OSA is just a peacetime mini-airline and DV air taxi service, squandering taxpayer dollars on a program with no wartime capability. CAT must receive enough ground training emphasis and flying time allotment to demonstrate to friendly critics and potential enemies that OSA is indeed a wartime requirement and stands ready to provide specialized airlift support to theater commanders in a combat environment.

A Training Summary. The five training areas discussed in the previous sections outline the minimum but necessary training programs OSA forces require to ensure wartime readiness. Only through such realistic, dedicated training programs as CAT, VMiNT, chemical defense, airspace management, and combat communications will OSA be truly ready. Wartime readiness training means peacetime DV airlift support will suffer some reductions but wartime support—OSA's overarching purpose—will be greatly enhanced. If OSA does not train in peacetime to perform as if in wartime, OSA will surely fail in its mission when needed in a threatening environment. The Air Force owes it to OSA's aircrews, passengers, and other users to ensure OSA is ready to go to war, today and tomorrow.

Equipment

Realistic peacetime training can go a long way to ensuring OSA can perform its wartime mission. However, even the best training cannot overcome certain equipment deficiencies. As with many of the training issues, several equipment deficiencies became readily apparent during Persian Gulf War operations. Problems with aircraft chemical defense equipment, secure and jam-resistant communications, and internal navigation equipment caused real concern for planners, users, and aircrews alike. In addition, we must address issues of aircraft defensive systems and painting schemes for future contingency operations. Although money is tight, OSA desperately needs some equipment upgrades and modifications to ensure wartime viability.

Chemical Defense. OSA aircraft flew in the Persian Gulf without an adequate chemical defense capability. The C-21As were not equipped with the proper connections to enable aircrews to plug in ACDE oxygen masks into the aircrafts' oxygen system. In addition, the ACDE's communications connections were not compatible with the C-21As' communications system.[61] In short, OSA aircrews could not breathe inside the aircraft or talk outside the plane if faced with a chemically contaminated environment. Fortunately, that threat never arose. Unfortunately, the chemical threat still exists all over the world and OSA aircraft still have the same deficiencies.

There is a plan to modify the C-21A fleet to overcome the aforementioned problems. In 1992, AMC modified a C-21A (tail number 84-0063) at Scott AFB with the aircrew eye and respiratory protection (AERP) system. The prototype AERP contained several features meant to overcome the C-21A's chemical defense deficiencies. First, the plane's oxygen system connectors were modified to enable the ACDE mask to plug into them. In addition, the ACDE's filter pack was modified to add a high pressure, short duration oxygen supply (bailout bottle) to cope with rapid decompression or toxic chemical situations. The aircraft modification also included electric suit blower receptacles to enable cool air to be forced into the ACDE, thereby cooling the wearer. Communications connections were modified to make ACDE and aircraft cords compatible. Finally, a hot microphone capability was added into the ACDE oxygen mask to allow cockpit communications between pilots. As of the sum-

mer of 1992, AMC personnel estimated that the program would cost approximately $400,000 to modify all OSA C-21As and take about two years.[62] At the same time, planners also looked at modifying the C-12F fleet, but specific program costs and timetables were not decided.[63]

For unknown reasons (probably financial), the Air Force has delayed the AERP program. It could not be determined when, or even if, the program will be funded and reinstituted. However, given the very real and worldwide chemical threat, the OSA fleet must have the ability to operate in a chemically contaminated environment. Therefore, the Air Force should immediately fund the AERP (or similar) program and push for a rapid modification timetable beginning with overseas-based OSA aircraft. This program must also include the OSA C-12Fs in Korea and Alaska. In addition, the C-12Fs recently transferred to the CPT program should also be modified since they could well see OSA service during wartime.

Combat Communications. Almost every Air Force operational aircraft in today's inventory possesses secure, jam-resistant communications. The HAVE-QUICK radio modification provides a frequency-jumping capability to overcome most enemy jamming efforts. In addition, secure voice radios enable aircrews to talk to ground facilities and other aircraft without compromising classified information or resorting to time-costly manual message encryption.

Unfortunately, OSA aircraft do not have either secure or jam-resistant combat communications systems. Although it can be argued that crews do not normally operate in an environment where such capabilities are needed, the opposite case is also strong. After all, OSA aircraft routinely carry senior level, DV passengers. Often, the passengers' high rank make them obvious and tempting targets for conventional as well as terrorist forces. Even though aircrews do not pass passenger identification information over unsecure aircraft radios, enemy knowledge of OSA aircraft movements places the planes and passengers at risk. In addition, secure radios give passengers the ability to freely communicate while airborne—an important capability, especially in a wartime environment.

Determining the specific costs of communications modifications for the OSA planes is beyond the scope of this work. However, the monetary costs are probably not very great. Besides, the funds are an important investment in aircraft and passenger security. Losing even one OSA plane and its passengers to enemy or terrorist actions because the aircraft lacked secure, jam-resistant communications is a far higher price to pay than adequately equipping the OSA fleet with the proper radios. Therefore, the Air Force should fund the necessary OSA radio modifications as soon as possible to ensure OSA aircraft can perform their wartime missions, even in the face of sophisticated enemy communications threats.

Internal Navigation Systems. OSA C-21As and C-12Fs are currently equipped with navigation systems that are dependent upon ground-based transmitting facilities. The C-21A's universal navigation system (UNS) and the C-12F's global navigation system (GNS) use signals from short-range (tactical air navigation [TACAN] system and very high frequency omni range

[VOR]) as well as long-range (very low frequency [VLF] and OMEGA) ground stations to ascertain the aircrafts' position. Under OSA's normal mission operations, these systems provide the aircrews with safe, reliable, and reasonably accurate navigation information, although there are some areas of the world where the long-range signals are unreliable.[64]

However, as described in chapter 5, the onboard navigation systems also have significant limitations that became quite apparent during the deployment and employment for Operations Desert Shield/Desert Storm. As a temporary fix, MAC removed inertial navigation system (INS) sets from CONUS C-9s and reinstalled them on the eight C-21As deployed in Saudi Arabia. Understandably, MAC pulled the INS sets back out of the C-21As after the war and reinstalled them into the original C-9s.[65] However, recognizing the serious navigation deficiency, MAC should have purchased additional INS sets and installed them on the entire OSA fleet. Unfortunately, no evidence could be found that MAC or Air Force officials have ever made plans or sought funds for permanent OSA aircraft INS modification.

Nearly all modern aircraft possess some form of INS sets. For system redundancy and greater navigation accuracy, many of the planes have two or three INS sets on board. The Air Force has even modified such older aircraft as the C-130 with INS-type capability.[66] However, OSA aircraft still have no INS sets and are therefore still without navigation systems adequate to support their wartime roles and missions. This deficiency must be corrected as soon as possible.

There are actually several viable solutions to the present navigation system limitations. First, the Air Force could purchase new, off-the-shelf INS sets and install them in the OSA fleet. Although each aircraft should have two sets for redundancy and better accuracy, today's tight budgets may limit purchases to one INS set for each aircraft. However, even one set per plane is far better than none. A variation of this first option is to buy new INS sets built specifically for the C-21As and C-12Fs. This second option could cost more but the new INS would probably interface much better with the present aircraft navigation and flight director systems. After all, the new INS sets are intended to add to and complement, not replace, the current onboard systems.

The third option is to investigate newer technologies and perhaps choose one for OSA use. The most promising is the global positioning system (GPS). GPS uses signals from several orbiting satellites to triangulate the aircraft's position, providing extremely accurate positional information. GPS receivers range from sets built into aircraft down to very small, hand-held units carried by individual soldiers in the field.

The US Marine Corps C-12s that deployed to the Persian Gulf took small GPS receivers with them. Using tape, the pilots stuck the GPS sets inside a cockpit window. Although these sets did not interface with the C-12's navigation system, the GPS sets provided highly accurate positional information—extremely useful on the long, overwater legs and in the remote desert areas where the built-in GNS sets did not receive dependable signals from the ground stations.[67]

The Air Force and Army are currently testing a built-in GPS system on a C-12 at Holloman AFB, New Mexico. The test program includes modifying the C-12 with an external GPS antennae for high quality satellite signal reception. In addition, electronic interfaces allow the GPS to provide positional information directly into the aircraft's flight director and autopilot systems. Therefore, the aircraft can fly the preset flight plan using GPS data to ensure highly accurate navigation in any weather without the need for ground stations.[68]

Unfortunately, the GPS information can be denied during wartime. The enemy could jam the satellite signals, although such an option is not likely since it would also keep their own forces from receiving GPS information. In addition, the Air Force can purposely degrade the GPS signals to render unencrypted receivers less accurate. That problem can be overcome by modifying the OSA planes with encryption-capable GPS sets so, during wartime, the aircraft can still receive the highest accuracy signals. However, even the less accurate information is probably adequate for OSA navigation.

Test engineers estimate the cost for an integrated GPS system—one that directly interfaces with the C-12's flight director system—at approximately $40,000 per plane. No similar cost estimates are available for the C-21A. However, the cost to modify the entire OSA fleet would probably be much lower than the estimate due to a volume purchase, continued price reductions as the supply of GPS sets increases to meet demand, and the generally lower costs of modern systems as even newer technologies come on-line.

It is beyond the scope of this work to determine which option is best for OSA and the Air Force. There may well be another option that is even better than the three offered above. However, what is needed is for the Air Force to take the initiative—now. Planners must immediately review the present navigation system deficiencies, determine the best fixes, and fund the necessary modifications. This process should have been done immediately after the Persian Gulf War. It is therefore long past time for the Air Force to put into OSA aircraft a modern, reliable, and accurate navigation system that interfaces with the aircraft's flight director system and does not depend upon ground stations. Such a system is absolutely necessary to ensure OSA can perform its wartime missions.

Aircraft Paint Schemes. The late 1983 controversy over paint schemes for the new C-12F and C-21A aircraft was described in detail in chapter 3. Basically, the Air Force Vice Chief of Staff, Gen Lawrence A. Skantze, felt the new planes should be painted in a camouflage scheme to, among other reasons, enhance wartime survivability and provide visible USAF support to OSA wartime missions.[69] Unfortunately, General Skantze surrendered to arguments from CINCUSAFE and CINCMAC that emphasized OSA's peacetime uses over its wartime missions, unsubstantiated concerns about aircraft overheating, and false assurances that the planes would be quickly repainted from white to camouflage in the event of war.[70] Therefore, in 1984 and 1985, the manufacturers delivered the new OSA planes with the familiar bright, white gloss paint instead of the then-current forest green camouflage scheme.

Although there may be some need for a few OSA planes to retain the white color scheme for diplomatic missions, most OSA planes should be repainted to today's current gray camouflage scheme. General Skantze was correct in that camouflaging the planes will help show Congress that the Air Force is serious about OSA's wartime roles and missions. More importantly, as General Skantze correctly concluded 10 years ago, camouflage will greatly enhance an OSA aircraft's wartime survivability. That is why, except for dedicated trainer aircraft, nearly all other Air Force planes are painted in a camouflage scheme. Meanwhile, OSA aircraft stand out with their bright white colors and, for the C-21A, shiny metal wing and engine leading edges.

If the Air Force is serious about the necessity of OSA during wartime, then the planes must be painted now in a camouflage scheme that improves their survivability. In addition, the Air Force should develop and fund a modification to replace the C-21As' gleaming metal exterior parts with nonreflective surfaces. If such new surface materials and paints also diminish radar returns, then so much the better.

Aircraft Defensive Equipment. Over the years many people have argued for the need to equip airlift aircraft with defensive, self-protection equipment. In 1989, the Air Force published Lt Col John A. Skorupa's landmark work on the subject entitled *Self-Protective Measures to Enhance Airlift Operations in Hostile Environments.* Although limited to MAC's major inter- and intratheater aircraft, Colonel Skorupa's book presented a comprehensive study of the threat, the current airlift forces' capabilities, and possible technological solutions to the defensive deficiencies.

Partly as a result of this effort, as well as a growing recognition by the general flying community that airlift aircraft were woefully prepared to survive even in low threat environments, MAC and Air Force officials took steps to install rudimentary defensive systems on MAC's major weapons systems. Under the airlift defensive systems (ADS) program, MAC planned to install missile warning and chaff/flare dispensers on its C-130, C-141, C-5, and C-17 aircraft and place radar warning (RAW) receivers on C-130 and C-17 aircraft. Owing to fiscal constraints, planners intended to install ADS only on primary airdrop aircraft—much less than half of all large MAC aircraft.[71] Unfortunately, the ADS program excluded OSA and other specialized aircraft from modification. Apparently planners thought OSA's wartime mission would not expose the planes to any real threat.

However, in February 1990, the vice CINCMAC, Lt Gen Anthony J. Burshnick, told the MAC staff that "the hand-held IR [infrared] missile is the most significant threat to MAC aircraft."[72] Typical examples of this missile include the Russian SA-7, SA-14, and SA-16 as well as the US Stinger. Such missiles are small yet deadly, easily hidden, and operated by a single individual with minimal training required. Thus, they are the terrorists' weapon of choice for antiaircraft missions and, at least in the case of the SA-7, are relatively cheap and easy to obtain on the world's black market. Therefore, these hand-held IR missiles are a major threat to OSA aircraft.

The ADS program, now known as SNOW STORM, is proceeding, albeit at a slow pace. As of early 1991 fiscal constraints had limited SNOW STORM modification to just 18 C-130s (six each MAC, AFRES, and ANG), three C-141s, and two C-5s.[73] At that time, OSA modification was still not planned. In fact, no evidence could be found that planners even considered SNOW STORM or some other form of ADS installation on OSA aircraft.

Admittedly, the modification costs are significant. The first SNOW STORM installations ran about $2 million per plane. It is unlikely that the Air Force will be willing to fund OSA fleet conversion at that price. However, OSA aircraft may not require such an expensive ADS. In addition, only those aircraft currently based overseas or likely to deploy outside the CONUS during a contingency are in great need of an ADS. Therefore, total program costs could come down to the neighborhood of $25 to $30 million. Still, this is a high price tag and may simply be unachievable at the present time.

However, the threat is only growing larger for OSA aircraft. Considering the seniority and criticality of OSA's passengers, the Air Force should procure some ADS capabilities for OSA. As it now stands, it would be all too easy for a wartime enemy or peacetime terrorist with a hand-held, IR missile to shoot down a C-21A carrying a theater CINC or other high-level DV. Senior Air Force and DOD officials—those who are typical OSA passengers—need to ask themselves how much their own lives are worth.

An Equipment Summary. Current OSA forces are not properly equipped to successfully perform their wartime missions. In the anticipated regional contingency scenarios of the future, OSA crews and aircraft must have modern equipment that overcome today's identified deficiencies. The Air Force must modify OSA C-21As and C-12Fs with chemical defense capabilities, secure and jam-resistant radios, onboard navigation systems not dependent on ground stations, and some form of missile defense equipment. In addition, OSA planes should be repainted in the current gray camouflage scheme. At the same time, the Air Force should also modify the C-12Fs recently transferred to the CPT program as well. These aircraft could be needed and easily used as OSA aircraft during wartime.

The proposed modifications will indeed cost money. In light of the current budget cuts, it would be easy for the Air Force to postpone or simply dismiss procuring the new equipment. However, if the Air Force is serious about OSA's wartime roles and missions, and if senior planners and commanders who are OSA passengers want to survive in wartime, then the money must be found now to fund the necessary procurements and modifications.

A Final Thought on Organization, Training, and Equipment

The previous sections described a number of recommendations to improve OSA and make it ready to perform its wartime missions. This is not to say OSA has failed to fulfill its roles to this point. However, the fact that OSA performed relatively well in the Persian Gulf was due to the ingenuity and

determination of the OSA personnel, as well as a lot of luck that the threat never materialized.

OSA may not be so fortunate in the next contingency. Therefore, OSA must reorganize to better meet the wartime, as well as peacetime, needs of its users. In addition, OSA must train in peacetime the way it will support the fight during wartime, not just fly DVs all over the country and the world as an executive mini-airline. Finally, OSA crews and aircraft need new and better equipment to make up for known deficiencies and enable OSA to fulfill its missions against the threats of today and tomorrow.

However, even with a new organization, better training, and modern equipment, OSA must give much more effort during peacetime to prepare for wartime. In addition, OSA must make two more important changes. First, the Air Force must continually exercise OSA under realistic wartime circumstances. Second, and perhaps most important but most difficult, the Air Force and OSA must change their attitudes—from that of a peacetime perk to that of a wartime support necessity. OSA needs the warrior spirit.

Exercise Participation: A New Mentality

Over the past five to 10 years, operational support airlift forces have only occasionally participated in a relatively few Air Force and joint exercises. Even then, OSA's role in the exercises has usually been minimal, often limited to one or two planes flying mostly DV support missions. MAC, and now AMC, has historically been very reluctant to use operational mission hours to support OSA exercise participation, apparently feeling that interrupting peacetime DV support would upset the generals. In 1985, the MAC staff even went so far as to tell the CINCMAC, Gen Duane H. Cassidy, that OSA should not participate in exercises because there was "an insufficient number of OSA flying hours and high priority competing demands for OSA airlift."[74] Obviously, the concept of wartime preparation was lost on the MAC staff. After all, what could have a higher priority than preparing OSA in peacetime to successfully perform its missions in wartime?

Meanwhile, exercise planners and coordinators are generally untrained in OSA regulations, missions, and procedures. Therefore, during the exercises validators and schedulers have virtually ignored all OSA mission areas except DV support. In addition, the OSA aircrews and operations personnel are themselves not very familiar with the varied missions and circumstances they can expect to face in wartime so it is therefore difficult to anticipate and simulate hostile conditions.

While there may be exceptions to these rather harsh observations, it is clear that OSA must practice its wartime roles and missions in peacetime under realistic, go-to-war conditions, to successfully meet actual wartime requirements. Operational readiness inspections (ORI) are not the answer since they are only a means to test wartime capabilities, not a way to train to accomplish the necessary missions. What is needed is a sincere, concerted

effort on the part of planners, users, and operators to make realistic exercises a regular part of OSA peacetime operations and training and therefore the foundation of a new OSA combat support mentality.

An Exercise Participation Proposal

Although some CONUS and perhaps even the overseas OSA units are not expected to deploy from their home bases during a contingency, every OSA unit must be prepared to deploy some or all of its forces and operate from a distant location. Peacetime exercises must therefore include deployment, as well as employment, practice. Until such time as civilian CLS support is replaced by Air Force maintenance, the CLS contracts will need alteration to allow for the regular peacetime deployments.

With the six-unit rebasing plan presented earlier in this chapter, the large-sized OSA units need not deploy as a whole entity. However, for realism and to provide enough support and force practice, exercises should require at least four aircraft deploy. In addition, the deployment package should include sufficient aircrews (minimum 1.5 per aircraft), operations support staff, and maintenance personnel to provide 24-hour-a-day support. Planners must ensure all six OSA mission areas receive tasking although passenger and cargo support will normally receive the highest priority on most missions.

The OSA aircraft must be totally dedicated to the exercise under the control of the JFACC (or equivalent), only flying missions in support of the operation—not any routine, TACC-directed missions. Exercise planners must generate enough demanding scenarios to adequately task all parts of the OSA system—operators and users. Command and control channels must be used to validate, schedule, launch, flight follow, and recover the missions. Maintenance personnel must perform required support in anticipation of enemy attack, either by conventional, chemical, or terrorist means. Aircrews must plan and fly their sorties using CAT procedures, including non-standard departures and arrivals, as well as low-level (1,000 feet AGL) routes, to ensure realism and adequate wartime preparation. If chemical defense scenarios are part of the overall exercise, OSA forces must participate to the maximum extent possible, including wearing the ground chemical ensembles or ACDEs as appropriate (as soon as the necessary ACDE modifications are made to the planes). Passengers and other users must understand that the exercise missions are not routine, airline-type OSA missions but will instead be flown as if under actual combat and threat conditions.

The exercises must simulate and practice all facets of combat support that OSA might face under actual wartime conditions. Planners must ensure OSA realistically plays in the exercises to include operations with ground and air C^2 stations (GCI, ABCCC, AWACS, etc.), friendly and enemy fighters, and ground threats (antiaircraft artillery and missiles). Exercise participation should progress from unilateral to joint and even combined exercises. Finally, OSA units should eventually participate in the most demanding training exercises—RED FLAG and COPE THUNDER. Only after successfully operating

under the highly realistic simulated combat conditions found in these exercises will OSA truly be considered ready to go to war.

A New Mentality

These exercise proposals are intended to achieve two primary objectives. First, realistic exercise participation best prepares OSA forces to successfully perform their wartime roles and missions. The old adage that forces fight the way they train is true, having been proven in warfare time and again since the dawn of mankind. Second, and closely tied into the first objective, is to bring a new mentality into OSA planners, operators, and users. That vital mentality—the warrior mentality—is the basis for RED FLAG and similar exercises that proved their worth during Operation Desert Storm. OSA needs the same mentality.

A New Name—A New Commitment

As a visible commitment to these dramatic changes, the Air Force should even revise the OSA name. Operational support airlift is a rather vague, nebulous title anyway. The changes outlined in this chapter clearly turn OSA into combat operations support airlift—COSA. Combat operations support airlift properly captures the true roles, missions, spirit, and mentality of tomorrow's C-21A and C-12F fleet.

Obviously, COSA is not a direct combat force. However, COSA is a necessary and viable combat support force. With the name change to COSA, the proposed changes to organization, training, and equipment, and a solid, unwavering commitment to regular, realistic exercise participation, the peacetime airline mentality surrounding today's OSA can and will be changed into the combat support mentality COSA forces need to survive and succeed in wartime.

In addition, by making the proposed changes the Air Force shows where it properly places its emphasis—on COSA's wartime mission. After all, wartime readiness is the overarching purpose of OSA and must be so for COSA as well. OSA's long and distinguished history, from pre-World War I to the present, shows numerous instances where OSA provided important, even critical support to commanders and staff personnel, during peace and war. Yet, today's OSA is mostly a peacetime executive mini-airline for senior Air Force and DOD officials, largely ignoring wartime readiness and operations. However, the lessons learned during previous wars and contingencies must not be forgotten. During Operations Desert Shield/Desert Storm, the Air Force and its OSA forces were very fortunate to face an enemy unwilling or unable to inflict much damage on US bases. In the next war, the US might not be so lucky.

COSA forces must be prepared to operate and successfully carry out their vital support missions against a variety of threats in a true combat environment. If Air Force OSA does not change soon, it will not survive the political

and budget battles much longer. However, if the Air Force makes the proposed changes in peacetime today, COSA will be ready for war tomorrow.

Notes

1. AFM 1-1, *Basic Aerospace Doctrine of the United States Air Force,* vol. 1, March 1992, 17.
2. Ibid.
3. AFR 60-23, *Operational Support Aircraft Management,* 21 October 1977, 1.
4. Memorandum, President Bill Clinton, to Heads of Executive Departments and Agencies and Employees of the Executive Office of the President, subject: Restricted Use of Government Aircraft, 10 February 1993, 1.
5. Ibid., 2.
6. Memorandum, Office of the Secretary of Defense, to director, Joint Staff, subject: Wartime Requirement for Operational Support Airlift Aircraft and Other Aircraft Configured for Passenger Use, 25 February 1993, 1.
7. Ibid.
8. Ibid.
9. Briefing, Joint Staff/J-8 Forces Division, subject: OSA Study, 10 March 1993, 4.
10. Message, 110122Z Mar 93, Joint Staff/J-8 to USCINCLANT/J4 et al., 11 March 1993, 1.
11. Ibid., 2.
12. Message, 152830Z Mar 93, USEUCOM/ECJ4 to Joint Staff/J8, 15 March 1993, 1–3.
13. Ibid., 2.
14. Ibid.
15. Message, 222315Z Mar 93, USCINCPAC/J4 to Joint Staff/J8, 22 March 1993, 1.
16. PACAF/DOA to PACAF/DOOU, letter, subject: Update of Requirements for Organizational [Operational] Support Airlift (OSA), 1 November 1991, 1–4.
17. Message, 222315Z Mar 93, USCINCPAC/J4 to Joint Staff/J8, 22 March 1993, 1.
18. Message, 191545Z Mar 93, USCINCCENT/CCJ3 to Joint Staff/ J-8, 19 March 1993, 1. (Note: USCENTCOM incorrectly referred to OSA as Operational Support *Aircraft* vice *Airlift.*)
19. Ibid.
20. Memorandum (proposed) attached to Joint Staff Action Processing Form (APF) #J-8 2165/166-00, subject: Wartime Requirement for Operational Support Airlift (OSA) Aircraft and Other Aircraft Configured for Passenger Use, 18 March 1993, 1–2.
21. The author personally flew the C-12F in several search and rescue (SAR) operations while the commander, Detachment 3, 1403d MAS, Osan AB, Korea, from August 1990 to May 1992.
22. The Japanese Air Self Defense Force (JASDF) uses C-21 aircraft as a primary SAR aircraft.
23. Based on personal experience as commander, Detachment 3, 1403d MAS, Osan AB, Korea, from 17 August 1990 to 28 May 1992.
24. Pilot seasoning is discussed is several sections of chapters 3 and 4.
25. Headquarters MAC/XP, MAC Programming Plan PPLAN 92-11, "OSA Transfer to USAFE," 14 May 1992, 1; Headquarters MAC/XP, MAC PPLAN 92-13, "Transfer of Theater OSA Mission in SOUTHCOM to ACC," 29 May 1992, 1; Headquarters MAC/XP, MAC PPLAN 92-12, "OSA Transfer to PACAF," 14 May 1992, 1; and message, 211943Z May 1992, Headquarters PACAF/DO to 5AF/DO et al., 21 May 1992, 1–2.
26. Draft memorandum of understanding among ACC, AFMC, AFSPACECOM, AMC, ATC, and AU, subject: Transfer and Operation of Operational Support Airlift (OSA) Assets, 2 April 1993, 1.
27. PACAF eventually retained six C-12Fs for the OSA role: two in Korea and four (vice five) in Alaska.
28. Headquarters AMC/XP, AMC PPLAN 93-18, "C-21 Rebasing," 2 July 1993, 1–3.
29. Briefing, Gen Ronald R. Fogleman, to AMC personnel at Air University, Maxwell AFB, Ala., April 1993.

30. Draft memorandum of understanding among ACC, AFMC, AFSPACECOM, AMC, ATC, and AU, 1.

31. Ibid., 2–4.

32. Ibid.

33. Ibid., 2.

34. Ibid.

35. "Operational Support Airlift (OSA) Wartime Requirements Study," US Army Training and Doctrine Command, Combined Arms Combat Development Activity, March 1990, cover.

36. Ibid., 1.

37. Ibid., 8.

38. Capt Robert L. Marion, US Army, Assistant S-3, OSAC, interview with author, 22 March 1993.

39. Author's personal notes taken at the operational support airlift interservice meetings, Headquarters USTRANSCOM, Scott AFB, Ill., 4 May 1993.

40. The author has spoken with several people who claim to have direct personal knowledge of such OSA abuses during the past year. However, these people spoke to the author on the condition of anonymity because they were in the chain of command under the alleged violators. It was beyond the scope of this work to independently corroborate the information, but, as suggested, it is only a matter of time before congressional, DOD, or Air Force investigators uncover such abuses if they have occurred.

41. Draft memorandum of understanding among ACC, AFMC, AFSPACECOM, AMC, ATC, and AU, 1.

42. Ibid.

43. Point paper, Headquarters MAC/XPYR, subject: Cost Benefit Analysis of CONUS OSA Rebasing, 11 March 1992, 1.

44. Mr Alan Whisman, Headquarters AMC/XPYR, interview with author, 4 May 1993.

45. Mr Alan Whisman, Headquarters AMC/XPYR, fax sent to author, 18 May 1993, 1–4.

46. AFR 60-23, *Operational Support Airlift (OSA) Management,* 1 August 1989, 3.

47. AFM 1-1, vol. 1, 17.

48. AMC Regulation 51-1, *C-9, C-12, C-20, C-21, C-137, and VC-25 Aircrew Training*, vol. 2, 8 September 1992, 1.

49. Ibid., 8.

50. Ibid.

51. Although no corroborating documentation was found, several people told the author that CINCCENT, Gen H. Norman Schwarzkopf, was shocked and dismayed that the OSA C-21As were not capable of operating in a chemically contaminated environment.

52. Lt Col David M. Willson, Headquarters AMC/TACC, interview with author, 4 May 1993.

53. Maj Gen Edward Tenoso, USTRANSCOM J3/J5, interview with author, 7 October 1992; and ibid.

54. Military Airlift Command (MAC) History, 1 January–31 December 1989 (U), 347. (Secret) Information extracted is unclassified.

55. MAC only allotted 15 percent of total OSA flight hours to local commanders for dedicated training missions with the other 85 percent controlled by MAC/DOOF and used for DV airlift missions.

56. Tactical pilotage charts are the best charts for tactical VFR training altitudes, both day and night.

57. There are no jumpseats in the C-12Fs so instructors would have to sit on the seat nearest to the cockpit.

58. Training Development Guide, "Airland Combat Aircrew Training Program," Headquarters MAC/DOT, 31 October 1987, i.

59. Message, 021825Z Jan 90, Headquarters MAC/DO to 21 AF/DO et al., 2 January 1990, 1–3.

60. "The C-12F and TVT," *The MAC Flyer* 38, no. 6 (June 1991): 16–18.

61. Willson interview.

62. Maj Roger Muirhead, AMC/XOVK, interview with author, 21 July 1992.

63. Lt Col Scott Trapp, AMC/XOVK, interview with author, 21 July 1992.

64. Based on the author's personal knowledge as a C-12F instructor aircraft commander and as commander, Detachment 3, 1403d MAS/19 ALS, Osan AB, Korea, from 17 August 1990 to 28 May 1992.

65. Willson interview.

66. Based on the author's personal knowledge as a C-130 aircraft commander, 36th Airlift Squadron, Yokota AB, Japan, 31 December 1993. (Note: The C-130 system is known as the self-contained navigation system [SCNS] and, although it uses INS-type information and does not rely on ground facilities, is not a pure INS.)

67. Lt Col John Young, Headquarters USMC/APP34, and CWO4 R. T. West, Headquarters USMC/ASM41, interview with author, 4 May 1993.

68. 1st Lt Ronald Jobo, 6585th Test Group/Guidance Test Division, Holloman AFB, N.Mex., interview with author, 15 April 1993.

69. Message, 102330Z Nov 83, CSAF/CV to CINCMAC/CC, CINCUSAFE/CC, CINCPACAF/CC, and AAC/CC, 10 November 1983, 1.

70. There never was a viable plan or supply stocks to repaint the planes. In addition, the C-21As that deployed to the Persian Gulf—a combat environment—were not repainted.

71. Point paper, Headquarters MAC/XPQS, subject: Airlift Defensive Systems (ADS), 1 April 1988, 1.

72. MAC/CV to MAC Staff, letter, subject: Command Policy for Airlift Defensive Systems, 20 February 1990, 1.

73. Point paper, Headquarters MAC/XRSS, subject: Project SNOW STORM, 8 February 1991, 1.

74. *MAC History: 1 January–31 December 1985* (U), 310. (Secret) Information extracted is unclassified.

Glossary

AA	administrative airlift
AAA	antiaircraft artillery
AAC	Alaskan Air Command
	Army Air Corps
AAD	administrative airlift division
AAF	Army Air Forces
AAFHS	Army Air Forces Historical Study
AAFSD	Army Air Forces Statistical Digest
AAS	Army Air Service
AATTC	Advanced Airlift Tactics Training Center
AAW	aeromedical airlift wing
AB	air base
ABCCC	airborne command, control, and communications
AC	Air Corps
	aircraft commander
ACC	Air Combat Command
ACDE	aircrew chemical defense ensemble
AD	air division
ADC	Air Defense Command
ADF	automatic direction finding
ADS	airlift defensive systems
ADMIN	administrative
AERP	aircrew eye and respiratory protection
AETC	Air Education and Training Command
AF	Air Force
AFAA	Air Force Audit Agency
AFB	Air Force base
AFCC	Air Force Combat Command
	Air Force component commander
AFCS	AF Communications Service
AFL	Air Force letter
AFLC	Air Force Logistics Command
AFM	Air Force manual
AFMC	Air Force Materiel Command
AFMPC	Air Force Military Personnel Center
AFOSAC	Air Force Operational Support Airlift Command
AFR	Air Force regulation
	Air Force Reserve
AFSC	Air Force Systems Command
AFSOC	Air Force Special Operations Command

AFSPACECOM	Air Force Space Command
AFTEC	Air Force Technical Evaluation Center
AGL	above ground level
AGOS	Air-Ground Operations School
ALCC	airlift control center
ALD	airlift division
ALF	airlift flight
ALS	airlift squadron
AMC	Air Materiel Command
	Air Mobility Command
AME	air mobility element
ANG	Air National Guard
AOR	area of responsibility
ARC	air reserve component
ASC	Army Signal Corps
ASD	Aeronautical Systems Division
	assistant secretary of defense
ATC	air traffic control
	Air Training Command
	Air Transport Command
ATO	air tasking order
ATSC	Air Technical Service Command
AU	Air University
ACIA	Aviation Career Incentive Act
AWACS	airborne warning and control system
BAI	backup aircraft inventory
BASI	Beech Aerospace Systems Incorporated
BFS	base flight scheduling
C^2	command and control
CAASS	Centralized Army Airlift Support System
CAT	combat aircrew training
CD	chemical defense
CDE	chemical defense ensemble
CDTQT	chemical defense task qualification training
CINC	commander in chief
CENTCOM	Central Command
CINCCENT	commander in chief, US Central Command
CINCMAC	commander in chief, Military Airlift Command
CINCPACAF	commander in chief, Pacific Air Forces
CINCTRANS	commander in chief, US Transportation Command
CINCUSAFE	commander in chief, US Air Forces in Europe
CLS	contractor logistics support
CMS	command mission support
COCARCOM	Combat Cargo Command

COD	carrier onboard delivery
COMALF	commander of Airlift Forces
CONAC	Continental Air Command
CONUS	continental United States
COSA	combat operations support airlift
CP	copilot
CSAF	chief of staff, Air Force
CTA	companion trainer aircraft
CTF	central training facility
Det	detachment
DCS	deputy chief of staff
DO	director of operations
DOC	designed operational capability
DOD	Department of Defense
DS/DS	Desert Shield/Desert Storm
DV	distinguished visitor
ECM	electronic countermeasures
EDS	European Distribution System
EUCOM	European Command
FAP	first assignment pilot
FCF	functional check flight
FEAF	Far East Air Forces
FEAMCOM	Far East Air Material Command
FOL	forward operating location
FORSCOM	US Army Forces Command
FY	fiscal year
GAO	General Accounting Office
GCDE	ground chemical defense ensemble
GCI	ground controlled intercept
GHQ	general headquarters
GLASCO	Gates Learjet Aircraft Service Company
GNS	global navigation system
GOR	general operational requirement
GPS	global positioning system
HAC	House Appropriations Committee
HASC	House Armed Services Committee
HUFH	*History of USAF Flying Hours*
HQ	headquarters
IFF	identification, friend or foe
IG	inspector general

ILS	instrument landing system
INS	inertial navigation system
IP	instructor pilot
IPlan	implementation plan
IR	infrared
ISA	indirect support aircraft
JCS	Joint Chiefs of Staff
JFACC	joint force air component commander
JRTC	Joint Readiness Training Center
JTF	joint task force
JULLS	Joint Universal Lessons Learned System
KTAS	knots true airspeed
MAC	Military Airlift Command
MACV	Military Assistance Command, Vietnam
MAG	military airlift group
MAGTF	Marine Air-Ground Task Force
MAJCOM	major command
MAS	military airlift squadron
MASP	military airlift squadron provisional
MASS	military airlift support squadron
MATS	Military Air Transport Service
MAW	Marine air wing military airlift wing
MEF	Marine expeditionary force
MENA	mission element need analysis
MENS	mission element needs statement
MIB	military intelligence battalion
MIT	minimum individual training
MOU	memorandum of understanding
NAF	numbered air force
NALIS	Navy Air Logistics Information System
NAVAID	navigational aid
NOA	nonoperating active
NORS	not operationally ready-supply
OA	operating active
O&M	operations and maintenance
OCAC	office of the chief of the Air Corps
OMB	office of Management and Budget
OPLAN	operations plan
OPORD	operations order
ORI	operational readiness inspection

OS	operational support
OSA	operational support airlift
OSAC	Operational Support Airlift Command
OSAD	Operational Support Airlift Division
OSD	office of the Secretary of Defense
PAA	primary authorized aircraft
PACAF	Pacific Air Forces
PACOM	Pacific Command
PAD	program action directive
PAX	passengers
PCS	permanent change of station
PDM	program decision memorandum
PDS	Pacific distribution system
PFP	pilot proficiency program
PLSC	Pacific Logistics Support Center
PMD	program management directive
POW	prisoner of war
PPLAN	programming plan
PROP	program plan
PS	photo squadron
PSOC	preliminary system operational concept
RAF	Royal Air Force
RAW	radar warning
RC	reserve components
RFP	request for proposal
RITS	reconnaissance intelligence technical squadron
RNALIS	Relational NALIS
ROC	required operational concept
ROE	rules of engagement
RON	remain overnight
R&R	rest and recreation
RTAFB	Royal Thai Air Force Base
SA	special activity
SAC	Strategic Air Command
	Senate Appropriations Committee
SAM	special air mission
	surface-to-air missile
SAR	search and rescue
SARSG	Support Airlift Requirements Steering Group
SASC	Senate Armed Services Committee
SEA	Southeast Asia
SECAF	secretary of the Air Force
SECDEF	secretary of Defense

SM	special mission
SOA	separate operating agency
SOC	system operational concept
SON	statement of need
SOUTHAF	US Air Forces, Southern Command
SOUTHCOM	US Southern Command
SOW	special operations wing
SS	support squadron
SSA	source selection authority
SSAC	source selection advisory council
TAC	Tactical Air Command
TACAN	tactical air navigation
TACC	tanker airlift control center theater air control center
TAG	tactical airlift group
TAM	theater airlift manager
TAS	true airspeed
TAW	tactical airlift wing
TCW	troop carrier wing
TDG	training development guide
TDY	temporary duty
TFW	tactical fighter wing
TPC	tactical pilotage charts
TRANSCOM	US Transportation Command
TRW	tactical reconnaissance wing
TTB	tanker, transport, bomber
TTI	tactical training initiative
TVT	tactical VFR training
UC	unified command
UHF	ultrahigh frequency
UK	United Kingdom
UNS	universal navigation system
UPT	undergraduate pilot training
US	United States
USACOM	US Atlantic Command
USAF	United States Air Force
USAFE	US Air Forces in Europe
USAFSO	US Air Forces South
USAFSD	*United States Air Force Statistical Digest*
USCENTCOM	US Central Command
USEUCOM	US European Command
USMTM	US military training mission
USPACOM	US Pacific Command
USSAG	US Special Advisory Group

USTC	US Transportation Command
USTRANSCOM	US Transportation Command
UT	utility transport
UTE	utilization
UTX	utility trainer experimental
VCSAF	vice chief of staff of the Air Force
VFR	visual flight rules
VHF	very high frequency
VLF	very low frequency
VIP	very important person
VMiNT	VFR mission navigation training
VOR	very high frequency omni range
WMP	war and mobilization plan
XP	director of Plans

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